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AMENDMENTS

to the

1978 Program of Studies for Senior High Schools

Replacement sheets should be substituted for the following pages:

(1) Table of Contents (Pages vii)
(2) Business Education (Pages 15-18, 25-26)
(3) Home Economics (Pages 73-74)
(4) Industrial Education (Pages 83-84, 105-110, 113-114 and 141-142)
(5) Mathematics (Pages 163-164)
(6) Science (Pages 191-192, 197-212)
(7) Social Studies (Pages 231-252)

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ACCOUNTING 10

Primary References

Century 21 Accounting (B20C). Gage Educational Publishing, 1969.
or
Syme, G. *Accounting I.* Prentice-Hall of Canada Limited.
or
Kaluza, H.J. *Accounting: A Systems Approach.* McGraw-Hill Ryerson, 1969. (92455).

Objectives

1. To emphasize the importance of maintaining adequate accounting records in business and in personal affairs.
2. To provide a basic training in accounting for a small business and for personal use. These include cash control and payroll.
3. To provide the foundation for more advanced training in accounting.
4. To develop traits of neatness, accuracy and the ability to interpret and analyze accounting records of a small business.
5. To introduce common business terms and accounting procedures in realistic settings.

Scope

Recommended Texts

Course Content	Gage	Prentice-Hall	McGraw-Hill
1. Small Business	Chapters 1-11 (Chapter 9 optional)	Chapters 1-6	Chapters 1-6
2. Banking Activities	Chapter 17 and pages 110-111 (Petty cash)	Part Ch. 10 (Petty cash) and Chapter 11	Chapter 7
3. Payroll	Chapter 25	Chapter 13 Part dealing with recording payroll	Chapter 10 topics 1,2,3, and topic 4 to the top of page 227

Workbooks

Workbook 10 for *Century 21 Bookkeeping and Accounting* (Acct. 10).

Working Papers for *Accounting I,* Set I — Chapters 1-10, Set II, Chapters 11-15.

Working Papers for *Accounting: A Systems Approach.*

Practice Materials —

Allen Electronic Company, Canadian Edition, 1974.

(Revised 1979)

ACCOUNTING 20

Primary References

Century 21 Accounting (B20C). Gage Educational Publishing,
or
Syme, G. *Accounting I.* Prentice-Hall of Canada Limited.
or
Kaluza, H. J. *Accounting: A Systems Approach.* McGraw-Hill Ryerson, (92455).

Objectives

1. To emphasize the importance of maintaining adequate records in a merchandising business.
2. To provide a basic training in typical accounting duties encountered in a merchandising business.
3. To provide a broader foundation for more advanced training in accountancy.
4. To develop an understanding of the preparation of financial statements and their significance in the accounting cycle.
5. To emphasize the function of accounting records as an aid to management and the need for intelligent interpretation of accounting records.

Workbooks

Workbook 20 for *20th Century Bookkeeping and Accounting* (Acct. 20).

Working Papers for *Accounting I,* Set I, Chapters 1-10, Set II, Chapters 11-15.

Working Papers II for *Elements of Accounting* (Chapters 8-14).

Practice Material

(One of the following may be selected)

Judd Paint Company. Canadian Edition. McGraw-Hill, 1974.

Quadrasonics Business Simulation Set

Village Garden Centre Business Simulation Set

It is recommended that business papers rather than textbook narratives for transactions be used.

(Revised 1979)

ACCOUNTING 30

Primary References

Century 21 Accounting, Advanced Course (B27C). (Canadian edition). Gage Publishing, 1970.

Kaluza, et al. *Elements of Accounting: A Systems Approach.* Advanced Course, McGraw-Hill Ryerson Ltd. 1971.

Optional References

Kaluza, H. J. *Elements of Accounting*. Canadian edition. McGraw-Hill Ryerson, 1969. (92455).

Syme, G. *Accounting 1*. Canadian edition. Prentice-Hall of Canada Limited, 1970.

Finney and Miller. *Principles of Accounting* (Introductory). Canadian edition. Prentice-Hall of Canada Limited.

Accounting Basics Series (Canadian edition)
— *Introduction* by R. E. Beam and C. Lund.
— *Special Journals and Related Systems* by R.E. Beam and C. Lund.
This series published by Prentice-Hall of Canada Limited.

Objectives

1. To emphasize the importance of maintaining adequate accounting records in all types of business.
2. To provide a basic understanding of accounting procedures applicable to single proprietorships, partnerships, and corporations.
3. To provide a foundation for post-secondary education and/or professional accounting.
4. To develop an understanding and use of financial records.

Scope

Course Content	Gage	McGraw-Hill Ryerson
1. Nature and Purposes of Accounting	Chapters 1 & 2	Chapters 1,2 & 3
a. Accounting Principles		
2. General Accounting Concepts	Chapters 3,4,7-14	Chapters 4,5,11
a. Voucher System		
b. Inventory Control		
c. Notes, Interest, Drafts		
d. Departmental, Branch, Subsidiary Accounting		
e. Payroll		
f. Asset Valuation		
g. Accruals and Deferrals		
3. Budgeting	Chapter 5	Chapter 7
a. Types of Budgets and Their Uses		
b. Budgetary Reports		
4. Forms of Business Organization	Chapters 15,16,17	Chapters 8,9
a. Single Proprietorship		
b. Partnership		
c. Corporation		

(Revised 1979)

Course Content	Gage	McGraw-Hill Ryerson
5. Financial Statement Analysis	Chapters 17 & 18	Chapter 12,13
a. Income Statement		
b. Balance Sheet		
c. Comparative Statements		
d. Ratio and Graphic Analysis		
6. Cost Accounting	Chapters 21,22,23	Chapter 6
a. Service Department		
b. Manufacturing Operations		
c. Cost Accounting Statements		
Optional Topics		
7. Taxation	Chapter 6	Chapter 10
a. Sales Tax		
b. Income Taxes personal and corporate		
8. Financial Statements		
a. Source and Application of Funds		
b. Analysis for Management		
c. Analysis for Investment		Chapter 13
9. Auditing		
a. Major Functions		Chapter 1 & 12
b. Basic Procedures		
10. Accounting Techniques and Methods	Chapters 19 & 20	Chapters 2 & 3
a. Peg Board		
b. Machine Accounting		
c. Punched Card		
d. Computer		
11. Special Sales Accounting	Chapters 24,25 & 26	
a. Installment Sales		
b. C.O.D. Sales		
c. Consignment Sales		

Workbooks

Working papers for *20th Century Bookkeeping and Accounting* (Advanced Course)

Chapters 1-7 (B804C), Chapters 8-14 (B805C), Chapters 15-26 (B806C).

Working Papers for *Elements of Accounting: A Systems Approach*. Advanced Course)

Workbook I Chapters 1-7, Workbook II Chapters 8-14.

Practice Sets

(One or more may be selected)

Practice Set 1 — Reed Auto Supplies.
Practice Set 2 — Norton and Page Ltd.
Practice Set 3 — Stanley Manufacturing Company Ltd.
These Practice Sets published by Gage Educational Publishing Ltd.

C. Central Processing Unit
Memory or Storage
Arithmetic and logic
Control

D. Output
Printers
Card Punch
Paper tape punch
Magnetic tape units
Magnetic disk
Graphic plotters
Visual display devices
Audio response units

Generalization VII: Problem solving by a computer consists of a number of tasks.

CONCEPTS & SUB-CONCEPTS

A. Programming
Problem definition
Flowcharting
Coding of Instructions
Testing of
Documentation

N.B. Depending upon the time and resources available to a teacher, a decision should be made regarding the depth to which the above topic may be explored.

Generalization VIII: The application of the computer in our society is varied.

CONCEPTS & SUB-CONCEPTS

A. Business

B. Government

C. Science

Generalization IX: Information processing involves an interdependence of man and machine.

CONCEPTS & SUB-CONCEPTS

A. Systems and Procedures

COMPUTING SCIENCE 30 (5 credits)

Introduction

The teaching of Computing Science 30 is dependent upon the availability of computer time and equipment to prepare input (programs and data). Before the decision is reached to offer this course, application should be made to the Curriculum Branch, Department of Education, indicating that:

1. A qualified teacher is on staff to teach the course.
2. Equipment needed to prepare student programs and data is available in the school, or has been approved for a new school by the School Building Board, Department of Education.

3. Computer time is available. The Curriculum Branch, Department of Education, will make arrangements for free computer time at the Northern and Southern Alberta Institutes of Technology, or local authorities may make arrangements with other data centres.

Primary References

Feingold. *Introduction To Data Processing.* Wm. C. Brown Co. (Burns and MacEachern Ltd., Don Mills, Ontario), 1971.

Support Materials

Teacher's Manual and Student's Workbook to accompany the above text.

or

Awad. *Business Data Processing.* Third edition. Prentice Hall of Canada, Scarborough, Ontario, 1971.

Support Materials

Teacher's Manual and Student's Workbook to accompany the above text.

Scope

Detailed coverage of the course outline.

Course Outline

Generalization I: There are many basic data processing principles:

CONCEPTS & SUB CONCEPTS

Data Processing
- Problem definition
- Logical sequencing of events

Generalization II: Any computer system is made up of a number of basic elements:

CONCEPTS & SUB CONCEPTS

A. Input Unit

B. Output Unit

C. Central Processing Unit
- Memory
- Arithmetic and Logic
- Control

Generalization III: A computer system may incorporate many and varied hardware devices.

CONCEPTS & SUB CONCEPTS

A. Input Output
- Card
- Card Punch
- Magnetic tape unit
- Key to tape unit
- Magnetic disk
- Magnetic drum
- Direct access terminal
- Paper tape reader
- Paper tape punch
- Line printer

(Revised 1979)

HOME ECONOMICS
CLOTHING AND TEXTILES

CLOTHING AND TEXTILES 10

Objectives

1. To develop good judgement in selection, style and fabric.
2. To realize that selection and construction of garments express personality.
3. To realize that care of one's clothing is a responsibility.
4. To learn to construct garments of varying difficulty using a variety of textiles.

Text

Horn, Marilyn J. *Second Skin.* Thomas Nelson & Sons.

Concept A	— **Significance of Clothing and Textiles to individuals in Society**	
Subconcepts	— Interrelationship of clothing and culture	— Social and psychological aspects of clothing
Topic Emphasis	— "The Silent Message of Clothes" — "Function of Clothing"	— Basic need for gratification — Self-concept — Clothing values
Subconcepts	— Clothing as a medium for artistic perception, expression and experience	— Physiological aspect of clothing
Concept B	— **Nature of Clothing and Textiles**	
Subconcepts	— Textiles	— Garments
Topic Emphasis	— Natural fibers — Man-made and synthetic fibers — Finishes — Differences in yarns — Construction of the woven fabrics affect performance	— To construct three or more well made garments involving new learnings of increased difficulty of a variety of fabrics — Pattern alterations — Draft or adapt a pattern for a portion of a garment
Concept C	— **Acquisition and Use of Clothing and Textiles**	
Subconcepts	— Consumer selection — Consumer use and care — Consumer responsibility	

CLOTHING AND TEXTILES 20

Objectives

1. To develop and use principles of good management.
2. To be aware of the many decisions to be made wisely in buying fabrics and ready to wear garments.
3. To be aware of the interrelationship of clothing and culture.
4. To encourage pupils in the appreciation of good design which includes function and beauty.

Texts

Craig, Hazel. *Clothing. A Comprehensive Guide.* McClelland & Stewart Ltd.

Ramsay, Vera. *Create Something Beautiful.* Box 1046, Station A, Vancouver, B.C.

Concept A — **Significance of Clothing & Textiles to individuals in Society**

Subconcepts
- Interrelationship of clothing and culture
- The social and psychological aspects of clothing
- Medium for perception, artistic expression and experience
- Economics
- Physiological aspects

Concept B — **Nature of Clothing and Textiles**

Subconcepts
- Textiles
- Garments

Topic Emphasis
- Synthetics
- Characteristics of yarns and variations on texture, design and use
- Specialty fibers for beauty
- Complex weaves for variety
- Construction methods other than weaving which give variety
- To analyze elements of good fit
- To do pattern alterations
- To use drafting to develop or to adapt creative and original ideas
- To make three garments or more

Concept C — **Acquisition and Use of Clothing and Textiles**

Subconcepts
- Consumer selection
- Consumer responsibility

Topic Emphasis
- To plan a workable budget within the family income and plan systematic guidelines to meet needs
- To recognize the responsibilities and obligations of consumers

CLOTHING AND TEXTILES 30

Objectives

1. An execution of custom dressmaking techniques.
2. To understand general standards of good fit.
3. To recognize the interrelationship of clothing and culture and the influence on fashion.
4. To analyze how clothing reflects the personality and values held by the wearer.
5. To recognize the knowledge needed by and responsibilities of an informed consumer.

Texts

Bane, Allyne. *Tailoring.* McGraw Hill.

Concept A — **Significance of Clothing and Textiles to Individuals in Society**

INDUSTRIAL EDUCATION

Introduction

Industrial Education is a program consisting of courses which provide a continuum of experiences, starting with exploratory activities in the junior high school and expanding in the high school to the development of skills related to career fields. This development of the student's skills is planned for through courses in industrial arts and vocational education culminating in on the job work experience, or entry into a job or post high school institution for further education.

The program consists of courses ranging from those designed for an exploration of the technologies and trade areas to units of practical preparation for a career. In the process the courses develop the student's knowledge of himself, his talents and his skills.

For information on sequencing and course description, refer to the "Handbook In Industrial Education for Guidance to Teachers, Counsellors and Administrators".

Programs

There are two parts to the Industrial Education program. The first part consists of the I.E. 10, 20, 30 series of courses and is designed for career orientation. These courses were developed primarily for students in laboratories that utilize the multiple activity approach as found in most smaller schools, but they can be taught in unit shops as well.

The second part consists of the I.E. 12, 22, 32 series of courses and is intended for career development. The courses are planned for use in schools where facilities are available to teach specific occupational areas.

Students may progress from the I.E. 10, 20, 30 series to the 22 level courses upon meeting specified basic prerequisites or upon recommendation of their principal.

Both sections of the program focus on seven career fields. These are:

Visual Communications
Mechanics
Construction and Fabrication
Electricity Electronics
Personal Services
Performing Arts
Horticulture

The I.E. 10, 20, 30 courses consist of a number of one credit modules related to the career fields while the I.E. 12, 22, 32 courses consist of a number of five credit modules of specific occupational content. Completion of seven five credit modules qualifies the student for recognition by the Apprenticeship Branch for credit towards a journeyman's certificate.

It is left to the administrators of the school to offer the courses or combination of courses best suited to the needs and interests of the students and the financial resources of the district.

Courses offered at the 22 and 32 level have to meet special criteria for staff and facilities. The Industrial Education Consultant must authorize these in order to qualify the students for special grants.

Objectives

The general objectives of Industrial Education complement the aims and objectives of the secondary school. The objectives of Industrial Education are:

1. to provide students with the curriculum content designed to develop funda-

mental tool and procedural skills which help prepare them to enter a family of occupations.

2. to provide students with courses that serve as vehicles which help them relate their academic knowledge to vocational competencies.

3. to provide students with courses that serve as vehicles which help them relate their academic knowledge to vocational competencies.

4. to provide students the opportunity to develop basic competencies, both academically and in work skills to enter either a job or a post-high school institution for further education.

5. to provide students with the environment whereby they may develop sound attitudes, acceptable work habits, and achieve a feeling of accomplishment.

INDUSTRIAL EDUCATION 10, 20, 30 SERIES (NEW PROGRAM)

Introduction

The Industrial Education 10, 20, 30 courses consist of content selected from fifty-seven one-credit modules.

The courses may be offered in an A and B series with each series consisting of 3 to 5 modules selected from the fifty-seven. Consideration must be given for prerequisite modules.

Each module requires a minimum of 25 hours of instruction time. The modules contain content related to the career fields of:

Visual Communications
Mechanics
Construction and Fabrication
Electricity-Electronics

Specific programming is left to local planners. Modules may be clustered to relate to career fields or they may represent a number of areas.

SAFETY NOTE

Every industrial education laboratory must have an effective safety program. The teacher must be vigilant to provide adequate and continuous supervision so that safe practices are followed in all laboratory activities.

INDUSTRIAL EDUCATION
10 (a)-(b), 20(a)-(b), 30(a)-(b)

The Industrial Education courses consist of content selected from fifty-seven one-credit modules. Each course requires the completion of a minimum of four modules to qualify for 4 - 5 credits. Some flexibility is allowed in order to accommodate most situations. By increasing the hours on a 25-credit module the requirement of 125 hours for a five-credit course can be met with four modules. Students may take both the A and B selections of the grade level course or take the A's only.

Content

1. Introduction
   — printing processes relief, planographic, stencil, intaglio
2. Image Creation
   — form and function
   — composition
   — photographic illustration
   — paste-ups
   — make-up
3. Conversion
   — variables — dot size, darkroom techniques, light and color
4. Production
   — presswork
5. Finishing
   — bindery

GRAPHIC ARTS 32B (PRODUCTION TECHNOLOGY)

References

Lindbeck and Lathrop. *General Industry.* 1969.

Content

1. An introduction to industry through production technology
   — modern civilization and industrial dependence
   — facets of industry; men, machines, materials
2. Industry and division of labor
   — job and operation breakdowns
   — flow charts
   — labor allocations
3. Personnel organization
   — industrial organization
   — formal organization
   — informal organization
4. Research and development
   — elements of a salable product
   — industrial research
   — prototype development
5. Simulated industrial production
   — industrial production
   — physical problems
   — sociological problems
6. Technological changes
   — growth of knowledge
   — technological changes and man

GRAPHIC ARTS 32C

The last module of the Graphic Arts sequence is open to students who have completed 30 credits or six modules in the major.

The 125 hours of instruction time available in this module may be used to:

a. Provide greater depth to a module taken previously. Individual students, groups of students or whole classes may elect to study an area in more detail. This in-depth study would be in duplication and reproduction, letterpress, photography or any of the modules named in the Graphic Arts sequence, or

b. Engage in actual Graphic Arts work supervised by the Graphic Arts teacher as a coordinator and a journeyman on the job.

COMMERCIAL ART MAJOR

VISUAL COMMUNICATIONS 12

Described under Graphic Arts.

COMMERCIAL ART 22A (GENERAL ILLUSTRATION)

Content

1. Introduction
   - relationship of commercial art to other areas of visual communications
   - occupational opportunities
2. Image creation
   - design and drawing
   - constructive drawing
   - expressive drawing
   - design in painting
   - printmaking

COMMERCIAL ART 22B (INFORMATION DESIGN 2D)

Content

1. Introduction
   - educational opportunities
2. Image creation
   - composition and design
   - symbols
   - layout
   - composition and design — three dimensional
   - shape and size

COMMERCIAL ART 22C (DESIGN 3D)

Content

1. Image creation
   - principles and elements of design
   - tools and equipment
   - safety
   - three dimensional forms
   - visual merchandising
   - exhibits

COMMERCIAL ART 32A (COMMERCIAL ILLUSTRATIONS)

Content

1. Image creation
   — illustration techniques
   — book and magazine illustrations
   — fashion illustrations
   — trademarks and logotypes
   — package design
   — cartoons
   — technical illustrations
   — architectural rendering
   — photography

COMMERCIAL ART 32B (PRODUCTION TECHNOLOGY)

References

Lindbeck and Lathrop. *General Industry.* 1969.

Content

1. An introduction to industry through production technology
   — modern civilization and industrial dependence
   — facets of industry; men, machines, materials
2. Industry and division of labor
   — job and operation breakdowns
   — flow charts
   — labor allocations
3. Personnel organization
   — industrial organization
   — formal organization
   — informal organization
4. Research and development
   — elements of a salable product
   — industrial research
   — prototype development
5. Simulated industrial production
   — industrial production
   — physical problems
   — sociological problems
6. Technological changes
   — growth of knowledge
   — technological changes and man

COMMERCIAL ART 32C

The last module of the Commercial Art sequence is open to students who have completed 30 credits or six modules in the major.

The 125 hours of instruction time available in this module may be used to:

a. Provide greater depth to a module taken previously. Individual students,

groups of students or whole classes may elect to study an area in more detail. This in-depth study could be in Design 2D or 3D, General Illustration or Commercial Illustration, or any of the modules named in the Commercial Art sequence, or

b. Engage in actual commercial art work supervised by the Commercial Art teacher as a coordinator of the student and by a craftsman on the job.

II. MECHANICS

Field Objectives

The Mechanics courses should give students an opportunity to:

1. Obtain exposure to, and a basic understanding of, the career field.
2. Develop the basic skills and knowledge to gain job entry or articulation with post-high school institutions.
3. Develop a standard of craftsmanship acceptable to the trade and himself.

RELATED MECHANICS MAJOR

MECHANICS 12

References

No single text is prescribed. Those listed below are recommended as prime references.

Duffy. *Power, Prime Mover of Technology*. 1972.

Stockel. *Auto Service and Repair*. 1969.

Content

1. Career field study
2. Safety
3. Shop practices
4. Automobile Care and Ownership
5. Power Sources
6. Power Plant Systems
7. Transmission of Power
8. Fluiding (optional)

RELATED MECHANICS 22A (POWER SYSTEMS)

References

Stockel. *Auto Service and Repair*. 1969.

Content

1. The internal combustion engine
   - construction and operation of automobile engines
2. The maintenance and repair of the internal combustion engine
   - disassembly procedures
   - assembly procedures
   - engine tune up

3. Engine cooling and lubrication
   — control of heat
   — lubricating systems
   — waste control
   — fuel system service

RELATED MECHANICS 22B (CARPENTRY)

References

Miller. *Building Construction: Materials and Methods.* 1968.

Smith. *Materials of Construction.* 2nd Edition.

Content

1. Introduction to tools and materials
   — design
   — material
   — basic woodworking processes — sawing, surfacing, shaping, joinery, fastening
   — hand tools
2. Introduction to concrete form construction
   — foundations and footings
   — form design
   — soil types
3. Form construction
   — materials
   — standards
   — functions
   — types
4. Principles and practices in making concrete
5. Floor support framing
6. Wall framing
   — types; Western, post and beam
   — sheathing
7. Ceiling and roof framing
   — terms
   — gable roof framing

RELATED MECHANICS 22C (ELECTRIC WIRING)

References

Canadian Electrical Code C22.1. 11th Edition.
Graham. *Interior Electric Wiring.* 6th Edition.

Content

1. Career opportunities in electricity
2. Safety
3. Installation of residential wiring
   — code
   — planning circuits

- tools commonly used
- power outlets
- lighting
- service panel
- special circuits
- wiring practice

4. Maintenance of electrical systems and devices
   - gas furnace heating
   - electric heating
   - rewiring techniques
5. Management practices
   - business organization
   - bidding for work
   - employee concerns

RELATED MECHANICS 32A (MACHINE SHOP)

References

Walker. *Machining Fundamentals.* 1969.

Content

1. Safety
2. Tool processes
   - measuring
   - layout
3. Shaping materials
   - hand tools
   - machine tools — power saw, lathe, drill press, grinder
4. Materials
   - identification of various metals
   - heat treatment

RELATED MECHANICS 32B (WELDING)

References

Pender. *Welding.*

Content

1. Career field study
2. Trade study
3. Safety
4. Measurement
5. Electric Arc Process
6. Oxy acetylene process
7. Fabrication

RELATED MECHANICS 32C

The last module of the Related Mechanics sequence is open to students who have completed 30 credits or six modules in the major.

2. Tune-up
   — test equipment
   — checking other systems of the automobile that relate to tune-up
3. Operational sequence for tune-up.

AUTOMOTIVES 32B (ELECTRICAL SYSTEMS)

References

Billiett and Goings. *Automotive Electrical Systems.*

Stockel. *Auto Service and Repair.*

Content

1. Electricity and magnetism
2. Sources of electrical energy
   — battery
   — generator
   — alternator
3. Application of electricity to the automobile
   — starting system
   — ignition system
   — lights
   — accessories

AUTOMOTIVES 32C

The last module of the Automotives sequence is open to students who have completed 30 credits or six modules in the major.

The 125 hours of instruction time available in this module may be used to:

a. Provide greater depth to a module taken previously. Individual students, groups of students or whole classes may elect to study an area in more detail to develop more skills. This in-depth study could be in power systems, tune-up, or any of the modules named in the Automotives sequence, or

b. Engage in actual garage work through a program coordinated by the Automotives teacher and under a journeyman mechanic on the job.

AUTO BODY MAJOR

AUTO BODY 12

References

Hogg: *Auto Body Repair and Refinishing.*

MacPherson: *Collision Repair Guide.*

Content

1. Career field study
   — employment opportunities
   — trade certification
2. Introduction to auto body work
   — auto body components

- types of damage
- special equipment use

3. Safety awareness
4. Shop operation
   - procedures
   - welding exercises
4. Oxy acetylene welding
   - procedures
   - welding exercises
6. Metal finishing
   - tools and processes
7. Painting
   - surface preparation
   - undercoating
   - paint application

AUTO BODY 22A

References

References the same as for Auto Body 12.

Content

1. Alignment
   - analysis of damage
   - use of templates
2. Auto body welding
   - metals
   - practice welds
   - cutting
3. Metal finishing
   - use of heat
   - filling metal
   - painting
4. Auto body trim and hardware

AUTO BODY 22B

Content

1. Shop operation
   - communications
   - tools
   - shop design
2. Auto body construction
   - body component shaping
   - assembly — welding, fasteners
   - seat construction
3. Alignment theory and practice
   - methods
   - body jack

FASHION AND FURNISHINGS MAJOR

FASHION AND FURNISHINGS 12
(Quick and Easy Sewing)

References

Cunningham. *Singer Sewing Book.*

Craig. *Clothing: A Comprehensive Guide.* 1968.

Content

1. Career field study
2. Safety
3. Introduction to Clothing
   — significance of clothing to individuals
4. Planning a wardrobe
5. Introduction to fabrics
6. Sewing by machine
7. Patterns

FASHION AND FURNISHINGS 22A
(Knits)

Content

1. Knits on the market
2. Care of knits
3. Patterns for knits
4. Knit sewing techniques
5. Projects using knits

FASHION AND FURNISHINGS 22B
(Fashion World)

Content

1. Principles and elements of design
2. Fashion or fad
3. Modelling
4. Consumerism
5. Merchandising in the fashion world
6. Projects

FASHION AND FURNISHINGS 22C
(Tailoring)

Content

1. Fabrics for tailoring
2. Fitting and alterations
3. Tailoring techniques
4. Accessories

FASHION AND FURNISHINGS 32A
(Interior Design)

Content

1. Principles and elements of design as related to the home
2. Household textiles
3. Projects for the home
   - window dressing
   - simple upholstery
   - home accessories
   - table linen

FASHION AND FURNISHINGS 32B
(Custom Sewing and Textiles)

Content

1. Career opportunities
2. Government and union legislation
3. Management
4. Consumerism
5. Cleaning fabrics

(Alternate Content for 32B)
PRODUCTION TECHNOLOGY

References

Lindbeck and Lathrop. *General Industry*. 1969.

Content

1. An introduction to industry through production technology
   - modern civilization and industrial dependence
   - facets of industry; men, machines, materials
2. Industry and division of labor
   - job and operation breakdown
   - flow charts
   - labor allocations
3. Personnel organization
   - industrial organization
   - formal organization
   - informal organization
4. Research and development
   - elements of salable product
   - industrial research
   - prototype development
5. Simulated industrial production
   - industrial production
   - physical problems
   - sociological problems
6. Technological changes
   - growth of knowledge
   - technological changes and man

Latin 20

Text

Breslove and Hooper. *Latin For Canadian Schools.*

Suggested Course Content

Lessons 28-55 inclusive; the last exercises in each chapter need not be emphasized. Derivative studies should be done orally. Relative, interrogative, demonstrative, reflexive and intensive pronouns should be taught for reading recognition and use rather than have the students memorize the paradigms.

Latin 30

Text

Breslove and Hooper. *Latin for Canadian Schools.*

Suggested Course Content

Lessons 56-78 inclusive. The English to Latin should be reduced to a minimum: omit recall and grammatical work on adverbs of place, compounds of fero, and subordinate clauses in indirect discourse.

NOTE:

The Breslove and Hooper text is satisfactory for studying the core material in grammar, but in order to allow flexibility in the Latin Program, it is suggested that teachers be encouraged to utilize a large number of resource materials which emphasize the development of reading comprehension. In addition to the text, Latin readings in the following are examples recommended for this purpose, but this list is not exclusive. Of these, only *Selected Latin Readings* by Taylor and Prentice may be obtained through the School Book Branch. The others are available through the publishers only.

Selected Latin Readings — B. C. Taylor and K. E. Prentice. Dent

Using Latin — J. Gunmere. Longman

Lingua Latina — H. O. Oerberg. Nature Method Language Institute (110 East 42 Street, New York) (Vol. I and II)

Civis Romanus — J. M. Cobban and R. Colebourne. Methuen

Sodales Duo — A. O. Nash-Williams. Cambridge University Press

First Year Latin — C. Jenny. Macmillan

Romani Apud Se — G. C. Lightfoot. Macmillan

Elementary Latin Translation Book — Rev. A. E. Hallard. Copp Clark

Tironibus — G. M. Lyne. Edward Arnold, London, England

Balbus — G. M. Lyne. Edward Arnold, London, England

First Reading Book — G. M. Lyne. Edward Arnold, London, England

Collins' Latin Dictionary — Collins. Toronto

NOTE:

1. Students who have successfully completed the minimum content suggested for the Junior High School Latin program should register in Latin 20.
2. Teachers who are recommending students for Latin 20 should ensure that the suggested course content for Latin 10 as outlined in the Program of Studies has been completed.

MATHEMATICS

Note: The total Senior High School mathematics program is under revision. Target date for implementation of the revised Grade 10 courses is Fall, 1980.

Objectives

While the different programs in mathematics have different specific objectives, the common general purposes of Senior High School mathematics courses are as follows:

1. To develop an understanding of mathematics as a creation of man and to develop an appreciation of the contribution of this discipline to the progress of civilization.

2. To develop precision in thought and expression.

3. To develop and maintain an understanding of the operations and concepts of mathematics.

4. To develop and maintain skill in mathematical operations.

5. To develop powers of logical analysis of problems and of presenting their solution in a clear and precise manner.

Mathematics 10, 20, 30, 31

This sequence of courses is designed for students in the academic pattern. The content is such that successful students may enter the university or a technical institute. These courses also contribute to general education.

MATHEMATICS 10

Recommended Texts

Nichols, Eugene D., Ralph T. Heimer, and E. Henry Garland. *Modern, Intermediate Algebra*. Revised edition. Holt, Rinehart and Winston of Canada Ltd., 1969

Wilcox, Marie S. *Geometry, A Modern Approach*. Addison-Wesley Publishing Company, 1968

or

Jurgensen, Ray C., John E. Maier, and A. J. Donnelly. *Modern Basic Geometry*. Markham, Ontario: Houghton Mifflin Canada, Ltd., 1975

Objectives

1. To assist the student in the reasoning, discovery, and justification of algebraic processes through basic properties.

2. To encourage students to discover mathematical truths and patterns for themselves.

3. To review the concept of proof.

4. To develop the ability to write deductive proofs.

Course Outline

The topics listed below should comprise the basic outline for Mathematics 10. The teacher should feel free to supplement these with additional topics if he so desires. Teachers should consult the curriculum guide for additional references and suggestions.

SCIENCE

Note: As of the fall term, 1979, the following Programs of Study for senior high school science courses are prescribed for use in Alberta schools. The "old" courses are to have been phased out as of that date.

General Objectives of Science Education 1-12

1. To develop the ability to inquire and investigate through the use of science process skills.
2. To promote assimilation of scientific knowledge.
3. To develop attitudes, interests, values, appreciations and adjustments similar to those ideally exhibited by scientists at work.
4. To develop an awareness and understanding of the environment with positive attitudes and behaviours toward its use.
5. To develop a critical understanding of those current social problems which have a significant scientific component in terms of their cause and/or their solution.
6. To promote awareness of the humanistic implications of science.
7. To promote an understanding of the role that science has in the development of societies and the impact of society upon science.
8. To contribute to the development of vocational knowledge and skill.

OBJECTIVES OF HIGH SCHOOL BIOLOGY

Students should:

1. Develop an understanding of the interdependence of living things upon themselves and upon climatic and soil factors.

2. Examine the dependence of man on his natural environment, the ways by which man is creating problems by upsetting the balance of nature, and ways by which man can live in greater harmony with nature.

3. Investigate the major differences which exist between various life forms and apply these principles by learning to identify various biological groups and species.

4. Understand the processes by which plants and animals function.

5. Learn through project and laboratory experiences the ways by which biologists carry out field and laboratory research.

6. Develop proficiency in the use of laboratory instruments.

7. Develop an understanding of the need for using a critical, quantitative approach when looking at biological data, especially as life forms and organic material often react in ways that are less predictable than is the case with inorganic material.

BIOLOGY 10

(3 Credits)

Objectives of the Biology 10 Program

10.1 To promote understanding and development of research skills by carrying out a project.

10.2 To study the principles of cell biology.

10.3 To gain a better understanding of the principles of classification.

10.4 To learn reasons for and techniques of collecting and maintaining appropriate biological specimens and to develop an appreciation of the importance of these activities.

10.5 To study the development and relationship of form, function and role in nature of the groups of life forms by the comparative study of representatives of the biological kingdoms.

Prescribed References

Biological Sciences Curriculum Study, *Biological Science: An Ecological*

5. Cellular respiration
   a. Energy release
      i. aerobic respiration
      ii. anaerobic respiration
   b. Energy utilization
      i. muscular contraction
      ii. absorptive activity
      iii. electrochemical activity
      iv. various syntheses

6. Excretion
   a. Kidney function
   b. Body fluid balance

7. Metabolic Controls
   a. Genetic control of hormones and nervous responses
   b. Hormonal
      i. plants
      ii. animals
   c. Nervous
      i. receptors
      ii. conductors
      iii. effectors

8. Human Reproduction

Unit II — Current Biological Problems (About 25 hours)

The text by R. Wagner is recommended for this unit and should be used with discretion — see the curriculum guide for further guidance.

Unit III — Student Project (About 20 hours)

Each student is expected to engage in a project to complete this program as in Biology 10 and 20. The project may be in any area related to biology. Encouragement may be given to have students investigate current biological problems or other topics that may focus on scientific, sociological, economic or political factors.

CHEMISTRY 10

Objectives of the Chemistry 10 Program:

After participating in the activities and completing the requirements of this course, the student should:

10.1 Know those concepts of chemistry as specified in the core outline.

10.2 Have competence in the language of chemistry, naming and writing the formulas and chemical equations.

10.3 Be skilled in techniques used by investigators in the field of chemistry.

10.4 Have a background knowledge related to the importance of chemicals and chemical processes in our economy.

10.5 Be aware of the possible harm to the environment which may arise from heavy metals.

10.6 Know the contributions made by various scientific investigators to the topics being studied.

10.7 Be aware of chemistry as a possible vocation and have an appreciation of its association with other sciences.

Organization of Program:

Approximately 40 hours of instructional time shall be devoted to the core topics and about 25 hours to elective topics. The content of the elective units is to relate to the core in one of three ways:

a. an extensive study of a core topic (breadth)
b. an in-depth, intensive study of a core topic, or
c. a practical application of a core topic

Prescribed Core References

Ledbetter, E. W. and J. A. Young, *Keys to Chemistry.* Don Mills: Addison-Wesley, 1977

Ledbetter, E. W. and J. A. Young, *Laboratory Keys to Chemistry.* Don Mills: Addison-Wesley, 1977

Jenkins, F. et al, *ALCHEM 10.* Edmonton: J.M. LeBel Enterprises, 1979.

Recommended Core References

Courneya, D. and H. McDonald, *The Nature of Matter.* Toronto: D. C. Heath and Company, 1976

Whitman, R. L and E. E. Zinck, *Chemistry Today.* Scarborough: Prentice-Hall Canada, 1976

IAC Modules:
Atkinson, G. and H. Heikkinen, *Reactions and Reason.*
Huheey, J., *Diversity and Periodicity.*
Don Mills: Fitzhenry and Whiteside (Harper & Row), 1973

Recommended Elective References (in addition to those listed above)

Worthington, G., *Chemistry of Metallurgy.* Agincourt: Book Society, 1977

Birenbaum, L., *Chemistry of Man and Molecules.* Agincourt: Book Society, 1975

Ashcroft, K., *Chemistry of Photography.* Agincourt: Book Society, 1976

Gordon, G. and W. Zoller, *Chemistry in Modern Perspective.* Don Mills: Addison-Wesley, 1975

Jenkins, F. et al, ALCHEM. *Alberta Chemical Industries.* Edmonton: J.M. LeBel Enterprises, 1979.

OUTLINE OF CHEMISTRY 10 CORE

Concepts:	Subconcepts:
10.1 The activities of chemical laboratory experimentation require basic skills and knowledge.	10.1.1 Various techniques are used to make qualitative and quantitative observations.
	10.1.2 Safety is of prime importance in the laboratory.
	10.1.3 Laboratory investigations follow a pattern involving such skills as hypothesizing, observing, interpreting, etc.
	10.1.4 The use of graphs in science enables the scientist to relate the variables of an experiment.

10.2 Measurement units are used to describe the properties of matter.	10.2.1 The development of the International System of Units (SI) provided a logical and consistent system of measuring length, mass, time, quantity and temperature. 10.2.2 The use of significant figures in measurements and calculations is a means of indicating precision.
10.3 Matter is classified in a variety of ways.	10.3.1 Matter is classified on the basis of physical or chemical properties. 10.3.2 Changes in matter are classified as being physical and/or chemical. 10.3.3 Matter may be classified as: 10.3.3.1 Mixtures or pure substances 10.3.3.2 Homogeneous or heterogeneous 10.3.3.3 Metals or non metals 10.3.3.4 Ionic or molecular
10.4 The present atomic theory was developed on the basis of the accumulation of physical and chemical evidence.	10.4.1 Many scientists contributed to the development of modern atomic theory. 10.4.2 Structure of an atom consists of a dense, positively charged nucleus surrounded by electrons. 10.4.3 The periodic table is a classification of the elements on the basis of their chemical and physical properties and atomic structure.
10.5 Chemical reactions may be classified and are represented by a chemical language.	10.5.1 IUPAC rules provide a consistent system for naming chemical substances and writing formulas for them. 10.5.2 The "mole" is a quantity of matter (6.02×10^{23} particles). 10.5.3 Chemical reactions may be represented by balanced chemical equations. 10.5.4 Chemical reactions may be classified according to type of reaction. 10.5.5 The writing and interpretation of balanced chemical reactions are based on the law of Conservation of Mass. 10.5.6 Chemicals and chemical reactions have many effects: environmental, economic, industrial, etc.

Chemistry 10 Elective Topics

Elective topics are to be chosen from the following list. A minimum of one topic is to be studied.

10.1 Metallurgy

10.2 Chemicals in the Environment

10.3 Chemistry of Soap and Cosmetics

10.4 Chemistry of Photography

10.5 Locally Developed Unit

CHEMISTRY 20

Objectives of the Chemistry 20 Program:

After participating in the activities and completing the requirements of this course, the student should:

20.1 Know the chemical principles underlying the chemistry specified in the core outline.

20.2 Be skilled in using proper laboratory techniques used by chemists and laboratory personnel.

20.3 Comprehend the historical development of the chemistry principles being studied.

20.4 Have the capacity to apply the knowledge and skills of chemistry to other situations involving chemicals at home and in industry.

20.5 Have interests and attitudes toward chemistry that will assist in the choice of vocations.

20.6 Know the chemistry facts and principles related to the open discussion of social issues of current interest.

Organization of Program:

Approximately 40 hours of instructional time shall be devoted to the core topics and about 25 hours to elective topics. The content of the elective units is to relate to the core in one of three ways:

a. an extensive study of a core topic (breadth)
b. an in-depth, intensive study of a core topic, or
c. a practical application of a core topic.

Prescribed Core References

Ledbetter, E. W. and J. A. Young, *Keys to Chemistry.* Don Mills: Addison-Wesley, 1977

Ledbetter, E. W. and J. A. Young, *Laboratory Keys to Chemistry.* Don Mills: Addison-Wesley, 1977

Gortler, L. B. et al, *Keys to Organic Chemistry.* Don Mills: Addison-Wesley, 1977

Jenkins, F. et al, *ALCHEM 20.* Edmonton: J.M. LeBel Enterprises, 1979.

Recommended Core References

Courneya, D. and H. McDonald, *The Nature of Matter.* Toronto: D. C. Heath and Company, 1976

Whitman, R. L. and E. E. Zinck, *Chemistry Today.* Scarborough: Prentice-Hall, Canada, 1976

IAC Modules

Atkinson, G. and H. Heikkinen, *Reactions and Reason*
Huheey, J., *Diversity and Periodicity*
DeVoe, H., *Communities of Molecules*
Jarvis , B. and P. Mazzocchi, *Form and Function*
Don Mills: Fitzhenry and Whiteside (Harper and Row), 1973

Recommended Elective References (in addition to those listed above)

Gordon, G. and W. Zoller, *Chemistry in Modern Perspective.* Don Mills: Addison-Wesley, 1975

Martin, D. and J. Sampugna, *Molecules in Living Systems.* Don Mills: Fitzhenry and Whiteside (Harper and Row), 1973

Hammill J., *Water, Chemistry and Ecology.* Agincourt: Book Society, 1974

Gordon, G., *The Delicate Balance.* Don Mills: Fitzhenry and Whiteside (Harper and Row), 1973

Ashcroft, K. and J. Hammill, *Chemistry of the Car.* Agincourt: Book Society, 1976

Pryde, L. T. et al, *Keys to Environmental Chemistry.* Don Mills: Addison-Wesley, 1975

Jenkins, F. et al. ALCHEM. *Analytical Chemistry.* Edmonton: J.M. LeBel Enterprises 1979.

Nimmo, Wm. S., *The World of Carbon.* Toronto: Wily Publishers, 1977.

OUTLINE OF CHEMISTRY 20 CORE

Solutions

Concepts:	Subconcepts:
20.1 Solutions are mixtures.	20.1.1 Solutions are homogeneous mixtures of solute(s) and a solvent. 20.1.2 Solutions may be composed of combinations of solids, liquids and gases.
20.2 Formation of aqueous solutions is a chemical reaction.	20.2.1 Aqueous solutions play a very important part in chemistry. 20.2.2 The dissolving of a solute in a solvent may result in ions, or molecules in solution, and energy changes. 20.2.3 Solutions may be classified as electrolytes or non electrolytes.
20.3 The proportion of solute to solvent is represented by the concentration.	20.3.1 Concentration of solutions is defined in terms of moles of solute per litre of solution, or moles of solute per cubic metre of solution. 20.3.2 Concentration and changes in concentration in solutions can be determined mathematically. 20.3.3 Solutions may be described as unsaturated, saturated, or supersaturated. 20.3.4 Solubility is the concentration of a solute in a saturated solution in equilibrium condition. 20.3.5 Factors that affect solubility are nature of solute and solvent, temperature and pressure.

Bonding

Concepts:	Subconcepts:
20.4 Chemical substances exist as elements bonded together.	20.4.1 Chemical bonds may be covalent or ionic. 20.4.2 Molecules formed by covalent bonds may be polar or nonpolar. 20.4.3 Bonding between molecules may be classified as dipole-dipole, or hydrogen bonding.

Organic Chemistry

Concepts:	Subconcepts:
20.5 Organic chemistry can be termed "Carbon Chemistry"	20.5.1 The carbon to carbon bonding results in a great variety of compounds. 20.5.2 Carbon compounds are some of the most important substances on earth.
20.6 Hydrocarbon compounds form an important group of chemicals.	20.6.1 Hydrocarbons may be classified structurally as aliphatic or aromatic. 20.6.2 The chemical and physical properties of hydrocarbons are the result of their structure and composition. 20.6.3 Hydrocarbon reactions can be classified as combustion, substitution, and addition. 20.6.4 The hydrocarbons form an important base for industry in Alberta.
20.7 Hydrocarbon derivatives form another important group of chemicals.	20.7.1 Major derivatives of hydrocarbons are alcohols, carboxylic acids, and esters. 20.7.2 The chemical and physical properties of these derivative compounds are the result of their structure and composition.

Chemistry 20 Elective Topics

Elective topics are to be chosen from the following list. A minimum of one topic is to be studied.

20.1 Chemistry of the Car

20.2 Environmental Chemistry

20.3 Polymers: Long Chain Molecules

20.4 Biochemistry

20.5 Qualitative Analysis

20.6 Locally Developed Unit

CHEMISTRY 30

Objectives of the Chemistry 30 Program:

After participating in the activities and completing the requirements of this course, the student should:

30.1 Know the facts and principles of chemistry as specified by the core outline.

30.2 Have competence in using the processes and techniques of chemistry in the identification of problems and the testing of proposed answers.

30.3 Be aware of the chemical factors related to issues of current interest.

30.4 Be informed about vocational and career opportunities in the chemical and technical fields.

30.5 Know the contributions that various investigators have made in the development of current chemical theories.

30.6 Understand the application of the concepts and principles learned in class to the production and use of such products as ethylene, gasoline, plastics, fertilizers, pesticides and foods.

Organization of Program:

Approximately 75 hours of instructional time shall be devoted to the core topics and about 45 hours to elective topics. The content of the elective units is to relate to the core in one of three ways.

a. an extensive study of a core topic (breadth)
b. an in-depth, intensive study of a core topic, or
c. a practical application of a core topic.

Prescribed Core References

O'Connor, P. R. et al, *Chemistry: Experiments and Principles.* Toronto: D. C. Heath, 1977

Davis, J. E. et al, *Laboratory Manual for Chemistry: Experiments and Principles.* Toronto: D. C. Heath, 1977

Jenkins, F. et al, *ALCHEM 30.* Edmonton: J. M. LeBel Enterprises, 1979.

or for Acid Base section:

Richardson, R.A., *Proton Chemistry: the Reactions of Acids and Bases.* Rexdale: Wiley and Son, 1976

Recommended Core References

Parry, R. W. et al, *Chemistry: Experimental Foundations.* Second Edition. Scarborough: Prentice-Hall, 1975

Metcalfe, H. C. et al, *Modern Chemistry.* Toronto: Holt, Rinehart and Winston, 1974

Young, J.A. and E. W. Ledbetter, *Keys to Oxidation-Reduction.* Don Mills: Addison-Wesley, 1974

National Science Curriculum Materials Project:
Slattery, R. T., *Acids and Bases*
Langrehr, J. S., *Oxidation and Reduction*
Doherty, J. P., *Energy in Chemical Reactions*
Agincourt: Gage and Co., 1975

Recommended Elective References (in addition to those listed above)

Gordon, G. and W. Zoller, *Chemistry in Modern Perspective.* Don Mills: Addison-Wesley, 1975

Seager, S. L. and H. S. Stoker, *Chemistry: A Science for Today.* Agincourt: Gage and Company, 1973

Jones, M. M. et al, *Chemistry, Man and Society.* Second Edition. Toronto: W. B. Saunders, 1976

Pryde, L. T., *Environmental Chemistry.* Don Mills: Addison-Wesley, 1973

National Science Curriculum Materials Project:
Calcraft, P. M., *The Chemistry of Carbon*
Craven, B., *Principles of Chemical Equilibrium*
Harcourt, R. D., *Chemical Bonding*
Stanely, R. J., *Rates of Chemical Reactions*
Agincourt: Gage and Company, 1975

Jenkins, F. et al. ALCHEM, *Metallurgy and Corrosion.* Edmonton: J. M. LeBel Enterprises, 1979.

Jenkins, F. et al. ALCHEM, *Ethylene and its Derivatives.* Edmonton: J. M. LeBel Enterprises, 1979.

Jenkins, F. et al. ALCHEM, *Nuclear Chemistry.* Edmonton: J. M. LeBel Enterprises, 1979.

IAC Modules
Gordon, G., *The Delicate Balance*
Martin, D. and J. Sampugna, *Molecules in Living Systems.*
Don Mills: Fitzhenry and Whiteside (Harper and Row), 1973

TOPICAL OUTLINE OF CHEMISTRY 30 CORE

Chemical Energetics

Concepts:	Subconcepts:
30.1 Each substance has a definite and characteristic heat content or enthalpy.	30.1.1 The enthalpy of a substance is the sum of the kinetic and potential energy of the molecules.
	30.1.2 The heat of formation is the energy required or released as a substance is formed from its elements.
30.2 Changes in matter involve a change in energy.	30.2.1 Changes that require energy are endothermic and those that release energy are exothermic.
	30.2.2 More energy is involved in nuclear changes than in chemical changes, and in general more energy is involved in chemical changes than in phase changes.
	30.2.3 In a phase, chemical, or nuclear change, the change in energy is the energy of the products less the energy of reactants.
	30.2.4 The ΔH of chemical and phase changes is determined calorimetrically.
	30.2.5 By addition of ΔH values for known reactions, ΔH values for new reactions can be predicted.
	30.2.6 The amount of energy released or absorbed in a phase, chemical or nuclear change is related to the number of moles of reactants.

Acids and Bases

Concepts:	Subconcepts:
30.3 Acids and bases can be defined in different ways.	30.3.1 Acids taste sour, change the color of indicators, etc. Bases taste bitter, change the color of indicators, etc.
	30.3.2 Acids neutralize bases.
	30.3.3 Arrhenius defined acids as those substances that increase the H_3O^+(aq) concentration and bases as those that increase the OH^- (aq) concentration.
	30.3.4 Bronsted and Lowry defined acids as proton donors and bases as proton acceptors.
30.4 The relative acidity of a solution can be measured.	30.4.1 The strengths of acids and bases vary and are measures of the equilibrium condition.
	30.4.2 The pH scale is a measure of the H_3O^+ (aq) concentration.
	30.4.3 Indicator color may be used to determine pH.

30.5 Acid-base reactions involve an exchange of protons.	30.5.1 An acid-base reaction can be represented by a net ionic equation. 30.5.2 The relative strength of bases can be used to predict the equilibrium conditions. 30.5.3 Titration is one of the main techniques used in quantitative measurement of acid-base reactions. 30.5.4 The determination of quantitative relationships in acid-base reactions is part of stoichiometry.

Oxidation-Reduction

Concepts:	Subconcepts:
30.6 Redox reactions involve an exchange of electrons.	30.6.1 Oxidation is defined as the loss of electrons. Reduction is defined as the gain of electrons. 30.6.2 Oxidizing agents cause oxidation and reducing agents cause reduction to occur. 30.6.3 A redox reaction can be represented by a net ionic equation.
30.7 In a redox reaction the electron loss and gain must balance.	30.7.1 Oxidation numbers or half-reactions illustrate the loss and gain of electrons. 30.7.2 Oxidation numbers or half-reactions may be used to balance equations. 30.7.3 Titration is one of the main techniques used in quantitative measurement of redox reactions. 30.7.4 The determination of quantitative relationships in redox reactions is part of stoichiometry.
30.8 The electrical potential of a redox reaction can be predicted and measured.	30.8.1 Reduction potentials are relative potentials of reduction half-reactions. 30.8.2 Oxidation potentials are negative reduction potentials. 30.8.3 The relative strengths of oxidizing and reducing agents are compared in terms of a table of reduction potentials. 30.8.4 The net potential of a redox reaction is the sum of the oxidation and reduction potentials. 30.8.5 The spontaneity of a redox reaction can be predicted from the relative strengths of the oxidizing agents or from the positive sign of the net potentials.
30.9 Redox reactions involve electrical energy.	30.9.1 Electrochemical cells convert chemical energy to electrical energy. 30.9.2 Electrolytic cells are used to convert electrical energy to chemical energy. 30.9.3 There are many applications of electrochemical and electrolytic cells.

Chemistry 30 Elective Topics

Elective topics are to be chosen from the following list. A minimum of two topics are to be studied.

30.1 Rates of Chemical Reactions

30.2 Chemical Equilibrium

30.3 Radiation Chemistry

30.4 Organic Derivatives and Products

30.5 Environmental Problems

30.6 Industrial Chemistry

30.7 Foods and Their Analogues

30.8 Fossil Fuel

30.9 Locally Developed Unit.

Note: Outline for each elective, with the exception of 30.9, are provided in the Curriculum Guide along with a list of references and resource materials.

PHYSICS 10

Objectives of the Physics 10 Program

The student should:

10.1 Demonstrate knowledge of the general concepts of physics which provide the basis for understanding natural phenomena.

10.2 Develop an understanding of interactions among physical systems.

10.3 Develop attitudes and skills associated with the processes of physics necessary for scientific inquiry.

10.4 Develop an awareness of the humanistic implications of physics.

10.5 Become aware of the impact that physics has had on the development of society.

10.6 Develop an interest in physics as a science and appreciate its close association with the other sciences.

Organization of Program

Approximately 40 hours of instructional time shall be devoted to the core topics and approximately 25 hours to elective topics. Content of elective units is to relate to the core in one of three ways.

a. an extension of a core topic (breadth)
b. an in-depth, intensive study of a core topic
c. a practical application of a core topic

Curriculum Core Topics

10.1 Physics as a Science and Physicists as Scientists

- 10.1.1 Definition of Physics
- 10.1.2 The Role of the Physicist

10.2 The Physics of the Early Greeks

- 10.2.1 Ideas of Aristotle as the Basis of Ancient Science
- 10.2.2 Natural and Violent Motion
- 10.2.3 Union of Aristotelian Physics and Christian Theology
- 10.2.4 16th Century Status of Aristotelian Physics

10.3 The Mathematics of Uniform and Non-Uniform Motion

- 10.3.1 Motion in the Natural Environment
- 10.3.2 Uniform Motion
- 10.3.3 Graphical Description of Uniform Motion
- 10.3.4 Non-Uniform Motion — Acceleration
- 10.3.5 Graphical Description of Non-Uniform Motion
- 10.3.6 Graphical Definition of Average Speed and Instantaneous Speed
- 10.3.7 Equations of Uniformly Accelerated Motion

10.4 The Insights and Techniques of the 17th Century Used to Describe Motion

- 10.4.1 Achievements of the 16th Century Scientists
- 10.4.2 Galileo's New Approach to the Science of Motion
- 10.4.3 Motion of Freely Falling Bodies
- 10.4.4 Scientific Reasoning Applied to a Definition of Motion
- 10.4.5 Indirect Test of the Galillean Motion Hypothesis
- 10.4.6 Mathematics of Freely Falling Bodies
- 10.4.7 Galileo's 17th Century Inclined Plane Experiment
- 10.4.8 Critical Assessment of Galileo's Procedure
- 10.4.9 Consequences of Galileo's Experiments
- 10.4.10 More Recent Acceleration of Gravity Experiments

10.5 Vector Analysis of Motion

- 10.5.1 Cause, Pattern and Relativity of Motion
- 10.5.2 New Terms Which Describe Motion
- 10.5.3 Graphical Analysis of Motion Using Vector Symbolism
- 10.5.4 Algebraic Analysis of Directional Motion
- 10.5.5 Vector Analysis of Motion

10.6 Natural Forces and Newton's Explanation of Motion

- 10.6.1 Accounting for the Cause of Motion
- 10.6.2 Forces as Vector Quantities
- 10.6.3 Sign Convention of Force Vectors
- 10.6.4 Vector Analysis of One and Two Dimensional Forces
- 10.6.5 Newton's First Law of Motion
- 10.6.6 Experimental Verification of the Inertia Principle
- 10.6.7 Mass as a Fundamental Property of Matter
- 10.6.8 Newton's Second Law of Motion
- 10.6.9 System Internationale Unit of Force
- 10.6.10 Newton's Third Law of Motion
- 10.6.11 Differentiating Between Mass and Weight
- 10.6.12 Apparent Losses in Weight of Bodies

Elective Topics

Elective topics must be chosen from the following list. A minimum of one topic is to be studied.

10.1 Motion in the Heavens I

10.2 Motion in the Heavens II

10.3 Cosmology

10.4 Fluids at Rest

10.5 Science and Scientists

10.6 Space Exploration

10.7 Experimental Studies of Motion

10.8 A Locally Developed Unit

Note: Outlines for each elective, with the exception of 10.8, are provided in the Curriculum Guide along with a list of references and resource materials.

Prescribed Core Reference

Paul, D. et al, *Physics: A Human Endeavor, Unit 1, Motion*. Toronto: Holt, Rinehart and Winston, 1976

PHYSICS 20

Objectives of the Physics 20 Program

The student should:

20.1 Demonstrate knowledge of the physical principles underlying the topics of physics specified in the course outline.

20.2 Develop skill in using experimentation, mathematical techniques, and other strategies as a means of substantiating knowledge of physical principles.

20.3 Become aware of the historical development of physics as a discipline.

20.4 Become aware of the social impact, past and present, of the application of physics principles.

20.5 Develop the ability to apply knowledge of physical principles to vocational and avocational interests.

20.6 Attain a deeper insight into environmental problems through understanding physical limitations.

20.7 Develop a positive attitude toward physics and an interest in science.

Organization of Program

Approximately 40 hours of instructional time shall be devoted to the core topics and approximately 25 hours to elective topics. Content of elective units is to relate to the core in one of three ways:

a. an extension of a core topic (breadth)
b. an in-depth, intensive study of a core topic
c. a practical application of a core topic

Curriculum Core Topics

20.1 Momentum and the Interaction of Bodies in Nature

- 20.1.1 Conservation of Mass
- 20.1.2 Problem of Discovering a Quantity of Motion
- 20.1.3 The Collision of Bodies
- 20.1.4 Conservation of Momentum
- 20.1.5 Using the Law of Conservation of Momentum

20.2 Energy as a Key Concept in the Study of Science

- 20.2.1 Energy
- 20.2.2 Work
- 20.2.3 Power
- 20.2.4 Kinetic Energy
- 20.2.5 Potential Energy
- 20.2.6 Gravitational Potential Energy
- 20.2.7 Conservation of Mechanical Energy
- 20.2.8 Friction and Molecular Interaction
- 20.2.9 Heat as a Form of Energy
- 20.2.10 Law of Conservation of Energy

20.3 Nature and Propagation of Waves

- 20.3.1 Waves as Energy Carriers
- 20.3.2 Transverse and Longitudinal Waves
- 20.3.3 Physical Description of Waves
- 20.3.4 Reflection and Refraction of Waves
- 20.3.5 Diffraction and Interference of Waves

Elective Topics

Elective topics must be chosen from the following list. A minimum of one topic is to be studied.

20.1 Kinetic Theory of Matter II

20.2 The Physics of Sound

20.3 Energy: Resources, Crises, and Conservation

20.4 Heat, Calorimeters and Expansion

20.5 Physics and the Environment

20.6 Simple Machines

20.7 Physics and Personal Safety

20.8 A Locally Developed Unit

Note: Outlines for each elective, with the exception of 20.8, are provided in the Curriculum Guide along with a list of references and resource materials.

Prescribed Core Reference

Paul, D., et al, *Physics: A Human Endeavor, Unit 3, Energy and Conservation Laws*. Toronto: Holt, Rinehart and Winston, 1976

PHYSICS 30

Objectives of the Physics 30 Program

The student should:

30.1 Demonstrate knowledge of the physical principles underlying the topics of physics outlined in the course outline.

30.2 Develop a facility in using scientific processes to identify and to solve problems.

30.3 Develop background knowledge related to social issues of current interest.

30.4 Gain information and insights into vocational and career opportunities in the physics, engineering and allied sciences.

30.5 Develop the ability to discuss the importance of objectivity in scientific research.

30.6 Recognize and cite evidence of contributions that various investigators have made in the development of modern physical theories.

Organization of Program

Approximately 70 hours of instructional time shall be devoted to the core topics and approximately 45 hours to elective topics. Content of elective units is to relate to the core in one of three ways.

a. an extension of a core topic (breadth)
b. an in-depth, intensive study of a core topic
c. a practical application of a core topic

Curriculum Core Topics

30.1 Nature and Behavior of Light

- 30.1.1 Propagation of Light
- 30.1.2 Reflection and Refraction
- 30.1.3 Interference and Diffraction
- 30.1.4 Dispersion
- 30.1.5 Polarization
- 30.1.6 Deficiencies of the Wave Model

30.2 Electric and Magnetic Fields

- 30.2.1 Electric Charges and Forces
- 30.2.2 Forces and Fields
- 30.2.3 Moving Charges
- 30.2.4 Moving Charges and Magnets

30.3 Electro-Magnetic Radiation

- 30.3.1 Electromagnetic Theory
- 30.3.2 Propagation of Electromagnetic Waves
- 30.3.3 Evidence for Electromagnetic Waves
- 30.3.4 The Electromagnetic Spectrum
- 30.3.5 The Ether Concept

30.4 The Structure of Matter

- 30.4.1 Chemical Nature of the Atom
- 30.4.2 Electrical Nature of the Atom
- 30.4.3 Quantum Behavior of Matter
- 30.4.4 Rutherford - Bohr Model of the Atom
- 30.4.5 Inadequacies of Atomic Models

30.5 Modern Physical Theories

- 30.5.1 Some Results of Relativity
- 30.5.2 Particle-Like Behavior of Radiation
- 30.5.3 Wave-Like Behavior of Particles
- 30.5.4 Significance of Mathematical Atomic Model
- 30.5.5 Heisenberg's Uncertainty Principle
- 30.5.6 Probability Interpretation of Quantum Mechanics

Elective Topics

Elective topics must be chosen from the following list. A minimum of two topics must be studied.

30.1 Geometric Optics

30.2 Optical Instruments

30.3 Kinetic Theory of Matter II

30.4 Special Relativity

30.5 Alternating Current

30.6 Electrical Circuits

30.7 Equilibrium

30.8 Meters, Motors and Generators

30.9 The Speed of Light

30.10 Trajectories and Orbits

30.11 Energy Measurement

30.12 A Locally Developed Unit

Note: Outlines for each elective, with the exception of 30.12, are provided in the Curriculum Guide along with a list of references and resource materials.

Prescribed Core Reference

Rutherford, F. J., et al, *Project Physics: Text/Handbook Unit 4, Light and Electromagnetism*. New York: Holt, Rinehart and Winston, Inc.

Rutherford, F. J., et al, *Project Physics: Text/Handbook Unit 5, Models of the Atom*. New York: Holt, Rinehart and Winston, Inc., 1975

SCIENCE 11

Introductory Statement

Science 11, as a program, should continue to emphasize skills, concepts, attitudes, humanistic and social implications of science which have been developed for the elementary and junior high school grades.

In this course, content is significant only to the degree that it provides for the realization of other objectives of the course. Student interest should be a significant criterion in the selection of learning experiences.

Major Objectives of Science 11

1. To enhance the student's self-image and develop a positive attitude toward science. The student should:
   a) pursue areas of personal interest
   b) participate in activities in which he/she can experience success.
2. To develop a critical understanding of some current social problems which have a significant scientific component in terms of their cause and/or their solution. The students might study problems such as:
   a) depletion of natural resources
   b) pollution of water and air
   c) over population
   d) improper use of chemicals
   e) science for the consumer.
3. To help students appreciate the scope of science. That is, the student should:
   a) recognize that science is a basic part of modern living
   b) recognize that science involves both inquiry processes and conceptual patterns
   c) recognize the interaction of science, the arts and the humanities
   d) recognize that the achievements of science and technology, properly used, are basic to the advancement of human welfare.

Rationale for the Science 11 Program

Student involvement in Science 11 should lead to successful experiences in learning and studying in various fields of science. During this course, it is hoped that students, as a result of their successful experiences, will develop an attitude which allows them to realize the changes on their lives which science brings about.

It is understood that the students taking Science 11 will have, in relation to science, a wide range of attitudes, interests, abilities, backgrounds, experiences, and knowledge. In order to assist teachers of these students in selecting relevant materials for their students, a wide range of resources for classroom use has been identified. These resources, however, are not meant to be restrictive and teachers should feel free to supplement them.

Recommended Resource Materials

1. Class activity units*
2. Student projects*

Theme 3: **Minorities**
- a. Minority groups
- b. Race and ethnic relations

Theme 4: **Influencing Behaviour**
- a. Social behaviour
- b. Public opinion, mass communication and propaganda
- c. Social control and deviation

Theme 5: **Role and Status**
- a. Role and status

Applied Sociology 30

Theme 1: **The Discipline of Sociology***
- a. Sociology as a field of study
- b. Scientific methods of study

Theme 2: **Sociology Applied**
- a. Applied sociology
- b. Crime and delinquency
- c. Youth rebellion
- d. Sociological phenomena

Theme 3: **Sociology and the Individual**
- a. Applied sociology and the individual
- b. Determining your goals
- c. Your educational analysis
- d. Mate choice and marriage

Theme 4: **Changes in Culture**
- a. Social and cultural change
- b. Social movements

*Since each three-credit course is to be independent and non-sequential, the first theme is repeated. A student may not have to take it more than once.

1971 ALBERTA SOCIAL STUDIES CURRICULUM

Rationale

Alberta's social studies curriculum (Grades I-XII) is premised on the assumption that schools must help students in their quest for a clear, consistent, and defensible system of values. Two inter-related implications of this assumption for social studies instruction stand out: firstly, students must be enabled to explore and assess the nature of values that influence their personal and social lives; secondly, students must be assisted to develop the ability to make decisions pertinent to both their individual beings and their roles as active participants in their physical and social environments.

Values to live by

In keeping with the basic tenets of democracy (and with optimism about the nature of man and the efficacy of democratic ideals), the social studies program invites open inquiry into the definition and application of individual and social values. Such inquiry will offer students **experience in living as preparation for living.** It cannot be assumed that the ability to make decisions of either a personal or social nature is a skill that children are either born with or acquire incidentally. Rather, it is a skill that is developed as children acquire appropriate knowledge and analyze and clarify values, attitudes and feelings that are contingent upon situations and issues. Stated differently, it might be said that knowledge is an essential component of the decision-making process but is not in and of itself sufficient. Values, attitudes, and feelings frequently determine what knowledge we will accept, and consequently, the nature of decisions that we make. It is necessary, therefore, for students to gain experience in identifying, clarifying, and assessing values, and establishing how they relate to the knowledge derived. In this way, children will come to know their own ideas and feelings as well as those of their peers and the adult generation; they will deal not only with "what is" but also with "what ought to be" and will acquire those skills they will need as intelligent shapers of their world.

ATTENDING TO AFFECTIVE AND COGNITIVE OBJECTIVES

A. The Valuing Process

Priority on valuing

Consistent with the above rationale, the objectives of the social studies program[1] place high priority on the valuing process. The valuing process involves three basic skills:[2] Students in the Alberta social studies should demonstrate that they are:

1 Please note that the objectives which follow are expressed in behavioral terms. They indicate the processes in which students should engage and, in a general way, identify the substantive content to which students' behaviour should relate. In other words, the objectives include both processes and content.

2 Raths, Louis, et al. *Values and Teaching* (Columbus, Ohio: Charles E. Merrill & Co., 1966)

Choosing —

1. Identifying all known alternatives.
2. Considering all known consequences of each alternative.
3. Choosing freely from among alternatives.

Prizing

4. Being happy with the choice.
5. Affirming the choice, willingly and in public if necessary.

Acting

6. Acting upon the choice.
7. Repeating the action consistently in some pattern of life.

Affective and Cognitive aspects of valuing

As students engage in the valuing process, the experience will involve both emotional reactions and intellectual understandings. It is essential to distinguish these affective and cognitive capacities and to direct educational effort along both dimensions.[3]

B. Affective Objectives

Affective objectives emphasize a feeling tone, an emotion, or a degree of acceptance or rejection. To choose, prize and act consistently and effectively, students should demonstrate that they are:

- Aware of values, willing to take notice of values, and giving controlled or selected attention to values
- Responding to values with openness, willingness and satisfaction

Internalizing a value complex

- Accepting values, preferring values and committing themselves to values
- Conceptualizing their own values and organizing a value system
- Becoming characterized by a value or value complex.[4]

The values referred to above should, at the awareness and response levels, include a wide range of individual and social values. Students eventually should accept, prefer, and commit themselves to certain of these values, while rejecting others. Finally, they should conceptualize their own values, organize a value system, and through their actions, become characterized by a particular value or value complex.

[3]Scriven, Michael, "Student Values as Educational Objectives" (West Lafayette, Ind.: Social Science Education Consortium, 1966) p. 18.

[4]Krathwohl, David, et al., *Taxonomy of Educational Objectives Affective Domain* (New York: David McKay Co., Inc., 1964).

Value issues as content

A powerful means of attaining these affective objectives is to have students confront real problems that involve conflicting values. Such problems may be referred to as value issues. Focusing upon value issues can enable students to clarify their own values and to recognize the value positions of others. Peer relationships, family matters, work, politics, religion, money, recreation, morality, culture, and other problem areas are fertile sources of value issues. The most potent of value issues will require students to examine their own behavior relative to:

1. The dignity of man
2. Freedom
3. Equality
4. Justice
5. Empathy
6. Loyalty
7. Other values

C. Cognitive Objectives

Cognitive objectives involve the solving of some intellectual task. The choosing, prizing and acting phases of the valuing process require that each student develop cognitive skills that will enable him to work with others in the solving of social problems. The cognitive skills which are exercised in problem solving are varied and complex. These skills may be summarized as follows.[5] Students should be able to:

Cognitive skills summarized

- Recall and recognize data which are pertinent to social problems
- Comprehend pertinent data (This skill includes the ability to translate, interpret and extrapolate from data.)
- Analyze pertinent data in order to identify elements, relationships and organizational principles
- Evaluate pertinent data in terms of internal and external criteria
- Synthesize pertinent data in order to create an original communication or propose a plan of action
- Apply pertinent data in the solving of social problems

[5]Bloom, Benjamin, et al., *Taxonomy of Educational Objectives: Cognitive Domain* (New York: David McKay Co., Inc., 1956) and Sanders, Norris M., *Classroom Questions: What Kinds?* (New York: Harper and Row 1967). Note that skills have been listed in an order more closely resembling the problem solving process. Bloom's *Taxonomy* lists skills according to difficulty; the order being recall, and recognition, comprehension, application, analysis, synthesis, and evaluation.

The "data" referred to in the above objectives might be drawn from everything man knows, believes, and can do — both formally structured knowledge from the disciplines and informally structured knowledge from ordinary experience.[6] Such data include:

Categories of knowledge content

- Knowledge of specific terminology and facts
- Knowledge of ways and means of dealing with social problems
- Knowledge of concepts, generalizations, theories and structures.[7]

Knowledge of specific terminology and facts should serve as a basis for dealing with social problems and understanding concepts, generalizations, theories and structures.

Knowledge of ways and means of dealing with social problems should include the ability to:

Problem solving method

1. Identify and clarify the problem
2. Formulate hypotheses
3. Collect data
4. Classify data
5. Analyze data and evaluate the desirability and feasibility of taking action on the problem
6. Propose a course of action and examine the desirability and feasibility of taking action on the problem.[8]

Knowledge of ways and means of dealing with social problems should also include the ability to:

Social skills

1. Interpret the feelings and ideas of others
2. Respond to the feelings and ideas of others in a manner appropriate to the occasion
3. Express one's own feelings and ideas to others
4. Cooperate with others, though not to the extent of compromising basic values.

Knowledge of concepts, generalizations, theories and structures should result from students synthesizing the specific data gathered or produced while confronting value issues. Some of the major concepts needed in studying human behaviour are outlined below. These concepts should be used by students in developing generalizations and theories which seek to explain people's values.

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[6]Johnson, Mauritz, *The Translation of Curriculum into Instruction* (Ithaca, N.Y.: Cornell University, 1968), p. 2.

[7]Bloom, *op. cit.*, p. 62 ff.

[8]Simon, Frank. *A Reconstructive Approach to Problem-Solving in the Social Studies* (Calgary: The University of Calgary, 1970). The Simon model differs from most methods of problem solving in that it leads to action on the problem.

Inter-disciplinary base of social studies concepts

INTERACTION is a key concept in the understanding of social problems. History, geography and the social sciences describe in part man's interaction with his social and physical environment.

1. **ENVIRONMENT** is, itself, an important concept which can be defined in terms of **Time, Space, Culture** and **Systems.**

2. Man's interaction with his environment produces **CAUSAL RELATIONSHIPS.** In order to understand causality, one needs to recognize that behavior is affected by **Goals, Norms, Technology,** and **Power.**

3. Since all man's interactions involve cause and effect relationships, he lives in a state of **Interdependence.** Interdependence may take the form of **Cooperation** and/or **Conflict** and may produce **Stability** and/or **Change.**

The spiralling of concepts

These and other concepts should be studied in more than one grade level on the understanding that lower grades will attend to the concept in a specific, concrete and simple manner. Succeeding grades will treat each concept in greater generality, abstractness, and complexity. [9]

PLANNING FOR THE ATTAINMENT OF MULTIPLE OBJECTIVES

The preceding statement of objectives offer only a general indication of the processes and content of learning opportunities in the social studies. **More detailed planning of learning opportunities is the responsibility of each teacher and class.** All learning opportunities must be consistent with the objectives outlined above, whether the learning opportunity arises from the structured scope and sequence or in connection with a problem of current interest.

A. STRUCTURED SCOPE AND SEQUENCE

Two-thirds time on structured scope and sequence

Approximately two-thirds of social studies class time will be spent inquiring into themes, value issues and concepts which fall within a scope and sequence specified by the Department of Education. This scope and sequence is very general, thus permitting teachers and students to select learning opportunities according to their own needs and interests; each grade are indicated below:

[9] Taba Hilda, *Teachers' Handbook for Elementary Social Studies* (Don Mills, Ontario: Addison-Wesley Company, 1967), Chapter 4.

SOCIAL STUDIES 10

CANADIAN STUDIES

This course deals with perplexing value issues facing contemporary Canadian society. Value issues should be investigated with the aid of concepts and processes from history, geography and the social sciences.

All the problems studied in the course, national or international, should be studied as they appear in the Canadian context, as the new social studies curriculum includes problems of a strictly international or global nature at other grade levels.

It is suggested that a minimum of three value issues should be studied: one from value Issues I, II, III, IV; one from Value Issues V, VI, VII; and one from Value Issues VIII, IX, X. One-third of the time may be devoted to the study of problems of current interest to students and teachers.

VALUE ISSUES

I. —	Should the endowed and more advanced regions of Canada contribute to the less developed regions of Canada?	**Canada Internal**
II. —	Should poverty be tolerated in the affluent Canadian Society?	
III. —	Should we encourage the process of urbanization?	Social Economic
IV. —	Should Canadians reject a trend toward high mass-consumption?	
V. —	Should Canada move toward greater national unity?	**Canada Internal**
VI. —	Should Canada have two official languages?	
VII. —	Should we encourage greater participatory government in Canada?	Political
VIII. —	Should Canada pursue a policy of non-alignment?	**Canada External**
IX. —	Should Canada move toward greater politcal and economic autonomy?	
X. —	Should Canada "massively" increase her foreign aid?	Social Political Economic

SOCIAL STUDIES 20

WORLD PROBLEMS AND ISSUES

The Social Studies 20 course includes the following two units which are structured by the Department of Education and allows one-third time which may be used for the study of problems that are of current interest to students and teachers. The two structured units and the problems of current interest may be taken in any time sequence which the teacher deems suitable.

UNIT ONE

POPULATION AND PRODUCTION

Major Problem

Can the earth support its growing population?

Objectives

The objective of this unit is to develop an awareness of a continuing concern for and a rational approach to problems that arise out of the population increase and scarcity of resources.

Definition of the Problem Through Development of Concepts

Is there a scientifically-measured basis for the widely-expressed fears of a "population explosion", or is there a "credibility gap"?

1. Viewpoints — philosophical, economic, scientific, historical and theological sources
2. Population distribution and growth
3. Systems of production
4. Systems of economy
5. Relationship between population and resources.

Issues Relating to "Population and Production"

1. Can the poor nations of the world expect to achieve a higher standard of living?
2. Should the "revolution of rising expectations" be encouraged?

Criteria for the Selection of Case Studies

1. Societies may be selected from any geographical area, past or present.
2. Selected societies or themes must have clearly recognizable problems of population and production.
3. Research data conclusive to inquiry-learning must be available.
4. Care must be exercised to avoid overlap with themes studied at previous or succeeding grade levels.

UNIT TWO

CHANGE VERSUS TRADITION

Major Problem

Have traditions and departures from traditions served to enhance the dignity of man?

Objectives

1. To show that the most intrinsic values of a people are subject to influence and eventual change as a result of cultural variations, and that these same forces are operative in any society, historic or modern.
2. To show that any society experiences the forces of change and to show how its traditions have yielded to, and resisted these forces.
3. To show the inter-relationship of cultural patterns and values.
4. To be able to identify the values of a society and understand how these values influence the activities of the society.

Definition of the Problem Through the Development of Concepts

1. The phenomenon of change (concept)
2. Forces of change (causes)
3. Consequences of change vs. tradition

Themes Illustrative of the Problem, "Tradition vs. Change"

Teachers may choose from the following themes those which seem best to attain the above objectives. The number of themes to be developed is left to the direction of teachers.

1. Religion
2. Social Groups
3. Law
4. Creative Expressions (Art Forms)
5. Education

Value Questions (Summary)

1. Should a society attempt to maintain its traditions?
2. What is the relevance of change and or tradition to:
   a) society?
   b) me?
3. What should be the criteria for accepting change?

Criteria for Selecting Societies and Themes to be Studied

1. Societies may be selected from any geographical area, past or present.
2. Selected societies or themes must have clearly recognizable forces of tradition and change.
3. Research data conclusive to inquiry learning must be available.
4. Care must be exercised to avoid overlap with themes studied at previous or succeeding grade levels.

SOCIAL STUDIES 30

WORLD PROBLEMS AND ISSUES

The Social Studies 30 course includes the following two units which are structured by the Department of Education and allows one-third time which may be used for the study of problems that are of current interest to students and teachers. The two structured units and the problems of current interest may be taken in any time sequence which the teacher deems suitable.

UNIT ONE

POLITICAL AND ECONOMIC SYSTEMS

Economic Systems (General)

1. Basic problem of scarcity
2. Answers to basic economic questions
   a) What should be produced?
   b) How should it be produced?
   c) For whom should it be produced?
3. Systems change

Economic Models (Economic System in its Basic Form Showing Relationship Between Elements)

1. Market
2. Command
3. Traditional

Chief Value Issue: Which economic system is best?

Political Systems

1. Why do political systems exist?
2. Problems faced by political systems
   a) Leadership — selection and control
   b) Responding to demands
   c) Decision-making process involved
   d) Institutions
   e) Application of decisions
   f) Role of the citizen
   g) Processes of continuation of change

Political Models

1. Totalitarian Polity
2. Democratic Polity
3. Traditional Polity

Chief Value Issue: Which political system is best?

Analytical Case Studies

Suggestion for the examination of case studies

a) The purpose of case studies is to apply the concepts developed in the previous sections of the unit.

b) Wherever possible, students should be expected to make value judgments about ideas developed in the case studies.

c) Students should identify the various adaptations of theory to actual situations.

d) Establish a working model for evaluating the various features of economic and political systems in the case studies.

UNIT TWO

CONFLICT AND CO-OPERATION

International Conflict

1. Basic reasons for international tension/conflict
   a) Ideological
   b) Economic
   c) Political
   d) Cultural
   e) Religious
2. The nature of war in the 20th Century
   a) Attitudes towards war
   b) Kinds of war
   c) Technology in war
   d) Course of war
      (1) Initiation
      (2) Interaction
      (3) Termination
3. Effects of war
   a) Political
   b) Economic
   c) Cultural

4. Case studies of a variety of wars which have occurred in the 20th Century to illustrate the ideas examined in the preceeding sections of the unit
5. Value positions associated with international conflict

Chief Value Issue: Is war a legitimate means of settling disputes among nations?

International Co-operation

1. Basic reasons for international co-operation
   a) Economic
   b) Political
   c) Cultural
2. Nature of international co-operation in the 20th Century
   a) Attitudes towards co-operation
   b) Kinds of co operation
   c) Effect of technology on co-operation
3. Results of international co-operation in the 20th Century
   a) Human welfare
   b) Security
4. Case studies of a variety of examples of international co-operation in the 20th Century to illustrate the ideas examined in the preceding sections of the unit
5. Value positions associated with international co-operation

Chief Value Issue: Are supranational bodies the answer to international conflict?

B. PROBLEMS OF CURRENT INTEREST

One-third time unstructured

Approximately one-third of class time in social studies may be devoted to problems that are of current interest to students and teachers. The Department of Education does not intend to structure the use of this one-third time. They may relate to problems of individual students, the school, the community or the world, and may concern the past, the present and/or the future. A given problem may be studied by the whole class, by a group, or by individual students. It is important that a record be kept of the problems studied by each student throughout his or her school career.

1978 ALBERTA SOCIAL STUDIES CURRICULUM INTERIM EDITION *

SOCIAL STUDIES AS CITIZENSHIP EDUCATION

The 1978 Alberta Social Studies Curriculum is based on the assumption that students can and should acquire characteristics of intellectual independence, sensitivity to their human and natural environments, moral maturity, and effective participation in community affairs. These characteristics, it is believed, will be required for effective community, Canadian and world citizenship in the coming decades.

OBJECTIVES OF THE 1978 ALBERTA SOCIAL STUDIES PROGRAM

To ensure the development of characteristics for effective citizenship, the objectives of the social studies curriculum are organized around three specific areas: Value Objectives, Skill Objectives, and Knowledge Objectives. Prescribed objectives have been selected to take into account students' ages and interests, and to ensure a logical sequence of learning experiences through the elementary and secondary grades.

VALUE OBJECTIVES

Values are basic or fundamental ideas about what is important in life; they are standards of conduct which cause individuals, groups and nations to think and act in certain ways.

The value objectives of the 1978 Alberta Social Studies Curriculum have been designed to assist students in three aspects of growth. At least one specific value objective for each aspect of growth is prescribed for each grade level topic.

— Growth in understanding of distinctive human values.

— Development of appreciations, and of positive attitudes towards self, other people, and the human environment.

— Development of competencies in processes of moral reasoning and value analysis.

KNOWLEDGE OBJECTIVES

Knowledge is one form of power. Only by "knowing" their world can people exercise even partial control of that world. Knowledge is also dynamic. Because the pool of knowledge is always growing and changing, effective citizens must have both the commitment and the skills to modify and extend their knowledge continuously.

The knowledge component of social studies objectives is drawn mainly from history, geography and the social sciences. History, in particular, integrates much of human experience and provides an essential base for the understanding of contemporary social issues.

Knowledge can be categorized, according to its degree of specificity, into facts, concepts and generalizations. In the knowledge component of the 1978 Alberta Social Studies Curriculum, thirteen concepts are designated as the basis for organization. Care has been taken to ensure that development of all thirteen concepts occurs at least once at each division level: primary; upper elementary; junior and senior high school. A minimum of three concepts and a series of related generalizations are prescribed for each curriculum topic.

* Boards may opt to implement all, or part, of the 1978 Alberta Social Studies Curriculum as an alternative to the 1971 curriculum.

Thirteen Organizing Concepts

Human Needs	Inquiry	Environment
Identity	Interaction	Institution
Values	Influence	Power
Perspective	Social Change	Resources
	Adjustment	

SKILL OBJECTIVES

The skill objectives of the 1978 Alberta Social Studies Curriculum include both *inquiry skills* and *participation skills. Inquiry skills* encompass eight "areas" of skills which correspond to the stages of a basic model for inquiry. *Participation skills* comprise four "areas" of skills and can be developed at all stages of inquiry. To maximize systematic development through the grades, all skill "areas" are prescribed for treatment in each topic. Teachers are encouraged to extend the range of specific inquiry and participation skills beyond those designated for topics and to modify examples that are provided, to accord with the learning abilities of students and available learning resources.

Inquiry Skills

A. Identify and Focus on the Issue
B. Establish Research Questions and Procedures
C. Gather and Organize Data
D. Analyze and Evaluate Data
E. Synthesize Data
F. Resolve the Issue
G. Apply the Decision
H. Evaluate the Decision, the Process, and (where pertinent) the Action

Participation Skills

A. Communicate Effectively
B. Interpret Ideas and Feelings of Self and Others
C. Participate in Group Decision-Making
D. Contribute to a "Sense of Community"

TIME ALLOCATION

Social studies content and objectives are prescribed for three-quarters of the class time that is allocated to social studies. One quarter of the total class time for any given year is available for inquiry into issues that are selected by teachers and students. The following guidelines should be used to organize the one-quarter time:

— Topics and issues from the structured three-quarter time may be extended.
— Topics should help students develop an awareness of, and concern for, current affairs at the community, national and global levels.

In grades one to ten, three topics per grade are prescribed for inquiry. In grades eleven and twelve, two topics per grade are prescribed. At all grades, the final responsibility for determining the time allocation for prescribed topics rests with school authorities.

CONTENT

The content for grades ten to twelve follows. At least one social issue per curriculum topic is prescribed for study by students at each grade level.

GRADE TEN — PARTICIPATORY CITIZENSHIP

Topic A — Human Rights in Canada

In this topic, students examine Canadian issues in which the political and civil aspects of human rights, both for individuals and groups, are at stake. Themes to be considered in the study of human rights issues should reflect contemporary and historical contexts and might include the following: freedom of speech (e.g., War Measures Act); protection against arbitrary actions by others (e.g., Human Rights Commission); the existence of an independent judiciary (e.g., role of the Ombudsman); technology (e.g., computers and privacy); language rights (e.g., Manitoba School Act); international human rights (e.g., Amnesty International).

GENERAL VALUE ISSUE: *SHOULD GOVERNMENTS GUARANTEE SOCIAL ORDER IN PREFERENCE TO INDIVIDUAL HUMAN RIGHTS?*

SPECIFIC SOCIAL ISSUES AND COMPETING VALUES:

Personal Freedom / Social Control — How much freedom should individuals have and how much should society restrict personal freedoms? (e.g., Should fingerprint records, census data and other personal information files be regarded as an invasion of an individual's rights to privacy or essential for the national welfare?)

Concern for National Welfare / Personal Freedom — Should people have some inalienable rights?

Competence / Tradition — Should an individual's rights in society be restricted by personal characteristics? (e.g., By age? By education? By sex? By race? By offences against the law?)

VALUE OBJECTIVES

Students shall develop personal growth in the following value-related areas:

- An understanding of the diverse values that underlie human rights issues.
- An ability to identify alternative positions in specific human rights issues and to make a choice between positions on the basis of questions* such as:
  — Am I willing to claim that anyone alse in the sama situation ought to make the same choice?
  — Am I willing to make the same choice, regardless of my role in the situation?
  — Am I willing to treate my choice as overriding other considerations?
  — Am I seriously prepared to act on my choice?

*Adapted from R.M. Hare's model of moral criteria.

(Source: **Freedom and Reason,** London: Oxford Universarity Press, 1963).

KNOWLEDGE OBJECTIVES

Students shall acquire information to davelop interpretations of the following concepts and genaralizations:

Institutions

As a minimum condition for its existance a society establishes authoritative institutions that can make decisions which are binding on all the people, provide for resolution of dissent, and effectively enforce basic rules.

The rights and responsibilities of individuals and groups have been dealt with in legislation at both the provincial and federal levels of govarnment in Canada.

The success of participatory govarnment in Canada depends upon a well-informed citizenry seeking to make decisions about matters which affect them as individuals and groups.

Values

All sociaties have systems of social control. Conflicts arise between the values of individual liberty and social control when both are sought.

Groups may be the victims of discrimination and prejudice because of values placed upon age, sex, race, religious or cultural differences.

Influance

Within democracies, fraadom of speech is ragarded as tha most essential individual right since it is the root of the technique of persuasion.

Attampts to expand human rights usually involva both persuasion and legislative force.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examplas

A. *Describe an issue* in which individual freadom is/was in conflict with social control agencies.
B. *Formulate research questions* for case studies of the dilemma of social control vs. individual freedom in Canadian history.
C. *Conduct participant-observation* of a situation in which violation of human rights is parceived to occur.
   Observe and listen to AV materials to gain historical and intarnational perspectivas on human rights issues.
D. *Compare and contrast points of view* to illustrate sources and types of prejudice and the consaquences of discrimination (theories of prejudice).
E. *Develop concepts* of "human rights" and "human rasponsibilities".
F. *Analyze values inherent in alternative solutions* to historical human rights dilemmas.
G. *Create a plan* to make paople aware of a violation of human rights or responsibilities.
H. *Judge the worth of consequences,* using critaria from Hara's model.

Participation Skills and Examples

A. *Express ideas* for a chartar of human rights by using analogies to clarify points.
B. *Demonstrate understanding of the needs of others* for both freedom and social control.
C. *Prepare a position,* in understandable and persuasive tarms, to contribute to a sense of mutual respect and tolerance.
D. *Demonstrate a sense of sharing* in creating a plan to resolve a human rights issue, based on a specific value: e.g., equal respect for all persons, individual freedom, social welfare, etc.

GRADE TEN — PARTICIPATORY CITIZENSHIP

Topic B — Canadian Unity

In this topic, students examine issues of continuing significance to Canadian unity. Issues to be analyzed should pertain to two or more of the following themes: multiculturalism, separatism, federalism, regional disparity, and constitutional reform. Commonalities and differences in the political, economic, geographic and socio-cultural goals and lifestyles of Canadians should be emphasized.

Students should be encouraged to recognize the various approaches that Canadians and their governments have taken historically and are taking today, in dealing with issues. Emphasis should be given to how individuals can interact with institutions and processes of government to influence government decisions in Canada today.

GENERAL VALUE ISSUE: *SHOULD THE CONCEPT OF REGIONALISM / PROVINCIALISM BE REGARDED AS INCOMPATIBLE WITH THE MAINTENANCE OF NATIONAL UNITY?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

Charity / Ownership — To what extent, and in what ways, should the endowed and more economically advanced regions of Canada support regions that are less endowed and economically advanced?

Provincial Autonomy / National Power — Should constitutional changes be made to satisfy the needs and wants of individual provinces of Canada?

National Unity / Ethno-Cultural Self-Determination — Should the people of English Canada do everything in their power to ensure that Quebec does not separate from the rest of Canada?

VALUE OBJECTIVES

Students shall develop personal growth in the following value-related areas:

- An understanding of different value positions associated with major influences on Canadian unity.
- A respect for the needs, interests, and perspectives of people from all regions of Canada.
- An ability to identify value positions underlying issues involving Canadian unity and to create solutions that are consistent with principles of justice.

KNOWLEDGE OBJECTIVES

Students shall acquire information to develop interpretations of the following concepts and generalizations:

Resources

Changes in technology and industrialization have altered the pattern of regional disparities in Canada over time. Governments may also intervene to influence such disparities.

Provincial economies based on production of primary products tend to have fewer opportunities for division and variety of labour than those based on manufacturing.

Identity

Pluralism in Canada tends to promote identification with a group holding values similar to the individual's, thus weakening the sense of national collectivity.

Interaction

There has been a continuous readjustment of power between the provinces and the national government within the Canadian federal system.

Participatory government in Canada makes available a variety of means by which citizens can influence government decision-making.

Inquiry

In recent years, increasing emphasis has been placed on interprovincial and provincial-federal strategies of action to identify, analyze, and assess issues of significance to Canada's provinces and regions, and the Canadian nation.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examples

A. *Identify the value, factual, definitional and policy elements* in two of the major social issues concerning Canadian unity.
B. *Formulate research questions* to increase understanding of the historical background to these issues.
C. *Interpret historical documents* relating to the issues. *Record historical data* to make comparisons and detect trends through the development of generalizations.
D. *Evaluate different points of view* regarding the value of multiculturalism to Canadian society, examining supporting evidence, bias and emotionalism.
E. *Generalize* about the commonalities among social issues being researched.
F. *Formulate alternative solutions* and list probable consequences of each.
G. *Create a plan of action* for constitutional amendment to implement one proposed solution.
H. *Examine the appropriateness of the plan* in terms of consistency with competing value positions.

Participation Skills and Examples

A. *Support ideas logically* to build a group definition of "national unity".
B. *Listen to expressions of ideas and feelings of individuals and groups* on preferences for Canadian federalism.
C. *Organize activities* to share data and derive a plan of action based on the data.
D. *Demonstrate a sense of sharing* in contributing to a clarified "Canadian consciousness".

GRADE TEN — PARTICIPATORY CITIZENSHIP
Topic C — Canada and the World

This topic enables students to broaden their perspective of citizenship by providing opportunities for examination of issues which result from Canada's involvement in the global community of nations. Such issues have their basis in peace and security, immigration, international trade and foreign investment and scientific and cultural exchanges. Inquiry should incorporate Canada's involvement in the Commonwealth, the United Nations, N.A.T.O., N.O.R.A.D., the Columbo Plan, G.A.T.T., I.M.F., international sporting events, and relations with the United States.

GENERAL VALUE ISSUE: *SHOULD GLOBAL INTERDEPENDENCE BE REGARDED AS INCOMPATIBLE WITH NATIONAL INTERESTS?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

National Prosperity / Canadian Way of Life — Should Canada welcome unlimited foreign investment? Should Canadians invest in the economies of other countries?
Nationalism / Internationalism — To what extent should Canadians strive to create an "internationalist" image?
Tolerance / Loyalty — Under what circumstances should Canada trade with countries whose ideologies represent values in conflict with Canadian values?

VALUE OBJECTIVES

Students shall develop personal growth in the following value-related areas:

- An understanding of value positions that underlie Canadian roles in the international community.
- An acceptance of the need to develop skills for effective citizen involvement in community endeavors at the local, provincial, national and international levels.
- An ability to reason about one or more issues involving Canada's global relationships and to evolve policies that attempt to satisfy the needs, and to meet the priorities of Canadians and people throughout the global community.

KNOWLEDGE OBJECTIVES

Students shall acquire information to develop interpretations of the following concepts and generalizations:

Influence

The status of Canada in foreign affairs has largely been achieved through Canada's role in international agencies such as the Commonwealth and the United Nations.

The goal of internationalism tends to balance the pressures upon Canadian foreign policy from major allies.

Human Needs

A basic aim of the foreign policy of any nation is the security of its citizens.

Canada has sought to protect the physical needs of Canadians by participating in tariff conferences with a view to stimulating its foreign trade.

The dependence of the Canadian economy upon the export of both natural resources and manufactured goods has shaped Canada's unique perspective on efforts to alter structures in international trade.

Environment

The extensiveness of Canada's land and sea borders has made involvement in international environmental agencies an important element of Canadian foreign policy.

Canada's geographic location has been a basic determinant of the main direction of policies for defence and trade.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examples

A. *Paraphrase an issue* pertinent to Canada's involvement in the global community of nations, using current affairs descriptions.
B. *Select appropriate resources for research* using the Canadian Periodical Index (or equivalent).
C. *Read and interpret* statistical data from maps, graphs and/or tables.
D. *Evaluate arguments* to determine whether or not supporting evidence is adequate.
E. *Summarize* the key sub-issues pertinent to the selected problem (based on the limited evidence examined).
F. *Formulate and evaluate alternative solutions* in terms of their consequences for national/ international ideals.
G. *Create a plan of action* to implement the solution adopted.
H. *Assess the process of inquiry* in terms of extent to which the chosen solution accommodates all available data.

Participation Skills and Examples

A. *Express ideas on the issue(s)* in a panel discussion.
B. *Interpret the expressions of ideas and feelings of others* in a simulation of an international dialogue.
C. *Prepare a position* using skills of negotiation.
D. *Assist in a group project* to organize a plan of action to increase global consciousness at a local level.

GRADE ELEVEN — PATTERNS OF CHANGE

Topic A — Case Studies from the Past

Topic A requires students to develop a process for examining social change. The process might constitute questions that deal with the nature of change; causes of change; resistance to change from within and without; evolution and revolution as strategies for initiating, managing and controlling change; consequences of change; and evaluation of change.

The process should then be applied to two or more case studies in which students examine struggles for political liberty, religious tolerance and social equality in evolutionary and revolutionary settings in European and North American history. The following should be considered by students and teachers in selecting case studies: The Renaissance; Reformation; Growth of Parliament; Scientific Revolution; Absolutism; American Revolution; French Revolution; Growth of Nationalism.

GENERAL VALUE ISSUE: *SHOULD CHANGE BE ENCOURAGED AS A MEANS OF IMPROVING THE HUMAN CONDITION?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

Tradition / Faith in Society's Ability to Solve its Problems — Should the lessons of history be used to reject change?

Personal Freedom / Social Welfare — Should authoritarian means ever be used to create changes that disrupt the lives of individuals?

Social Orderliness / Immediate Satisfaction of Needs — Should evolutionary change be regarded as more desirable than revolutionary change?

VALUE OBJECTIVES

Student shall develop personal growth in the following value-related areas:

- An understanding of alternative value positions regarding the relationship of social change and human dignity in major historical eras and events.
- An appreciation of the knowledge that can be gained through analyzing the social thinkers of the past.
- An ability to reason about one or more specific issues involving social change, and to make a defensible judgment as to how social change has affected the human condition.

KNOWLEDGE OBJECTIVES

Students shall acquire information to develop interpretations of the following concepts and generalizations:

Social Change

Change brings about change. Change in one area has a "ripple effect" in bringing about change in other areas.

Violent changes frequently occur in societies where arrangements for peaceful change are restricted. However, most social change tends to occur incrementally rather than abruptly.

Perspective

The individual's perception of the rate of change is often different from the overall degree of change in society

Institutions

Institutions tend to have a conservative, stabilizing influence on society.

Societies which support the concept of progress usually provide peaceful avenues of change within and through their institutions.

Adjustment

Throughout history, faith in intelligence and reason have rescued Western society from long periods of social turmoil and provided the foundations for subsequent social orders.

When a new economic class becomes dominant in a society the values of that class tend to become dominant in the culture.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examples

A. *Paraphrase an issue* using data from a variety of first-hand descriptions.
B. *Formulate research questions* to examine the concept of "change" in selected historical case studies.
C. *Read and interpret* historical print materials to gather data relevant to case studies.
D. *Categorize changes* in a society as either internally initiated or caused by outside factors.
E. *Formulate generalizations* about the nature of change in society by relating causes and effects of change in specific situations.
F. *Formulate solutions* to the issue and justify the proposed solution according to different human values.
G. *Create a plan* for determining the desirability of implementing policies to control the direction of social change.
H. *Assess the process* in terms of apparent validity, and modify as necessary for further application.

Participation Skills and Examples

A. *Adapt a communication* to build consensus on a process for examining social change.
B. *Interpret the ideas and feelings of others* regarding the efficacy of change in improving the human condition.
C. *Apply alternate roles* in acting out a classical dilemma in Western history.
D. *Assist in group projects* by co-operating effectively in a case study.

GRADE ELEVEN — PATTERNS OF CHANGE

Topic B — Case Studies of Contemporary Societies

In Topic B, students apply the process for examining change developed in Topic A to one or more contemporary global issues arising from relationships between resources and population. Inquiry could be undertaken by examining forces like economic growth, trends in world population, food supply, natural resources, and energy and the environment.

The revised model should then be used to analyze case studies from contrasting contemporary societies: e.g., China, India, Tanzania, Brazil, Italy, Japan, West Germany, France. The study of this topic should enable students to make judgments about the kinds of attributes that Canadians need to live in a world society that is subject to rapid material change, and to reflect upon these attributes in the context of their own lives.

GENERAL VALUE ISSUE: *SHOULD NEW SYSTEMS OF SOCIAL THOUGHT BE DEVELOPED FOR DEALING WITH CONTEMPORARY WORLD ISSUES OF RESOURCES AND POPULATION?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

Material Achievement and Progress / Pride in Culture — Should underdeveloped nations emulate the procedures for change used by developed nations?

National Prosperity / Welfare of Mankind — Should there be international controls for pollution?

Humanitarianism / National Self-Reliance — Should there be a global system to control the production and distribution of food?

Pride in Culture / Physical Survival — Should survival be more important than ideals and traditions?

VALUE OBJECTIVES

Students shall develop personal growth in the following value-related areas:

- An understanding of contrary values that create different perceptions of the desirability of change within a society.
- Increased ability to cope with uncertainty in today's world.
- An ability to evaluate alternative solutions to resource and population issues, in terms of the conflicting criteria of global survival and optimum individual well-being.

KNOWLEDGE OBJECTIVES

Students shall acquire information to develop interpretations of the following concepts and generalizations:

Environment

The physical resources of any nation are only one element in the environment affecting the population which that society can maintain. Level of technology, flexibility of culture, and trading patterns may be equally or more significant.

Comparisons of productivity and population growth in a sampling of countries reveal negative correlations.

Human Needs

Predictions for the future suggest that increased world population will aggravate economic and social problems facing the world today. The main issues of the future are projected to include the feeding, clothing, housing, education, and employment of growing numbers of people.

The concept of "poverty level" has an upward level which is relative, and varies from culture to culture, and a lower level which is absolute and applies to all nations.

Perspective

All cultures view reduction in death rate as desirable, but wide differences exist between cultures regarding "acceptable" technology for encouraging it (e.g., medicine, family planning).

Inquiries into the relationship between resources and population based upon Western rationalism may not explain non-Western viewpoints satisfactorily.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examples

A. *Describe an issue* to include reference to key concepts like population growth, economic growth, food supply, resources depletion and environmental concern.
B. *Select appropriate techniques and resources* to provide data about trends in each of the areas of global concerns.
C. *Read and interpret* graphs and tables showing trends in economic growth, world population, food supply, and natural resource use.
D. *Compare and contrast* viewpoints in relating social philosophies to specific human problems.
E. *Generalize by inferring cause and effect relationships* between systems of production and demography.
F. *Formulate alternative solutions and predict the consequences of each.*
G. *Create a plan* to resolve a global issue and evaluate the implications of the plan in terms of competing human values.
H. *Decide whether to culminate inquiry or to extend* into new situations.

Participation Skills and Examples

A. *Express ideas clearly* in designing and simulating a meeting of national leaders to discuss a global issue.
B. *Listen to alternative points of view* on the issue(s) and accept the dilemmas of others seeking to resolve the issue(s).
C. *Negotiate to influence others* to one's personal position on the responsibility of Canadians in a global issue.
D. *Assist in a group project* to raise awareness of the relationship of the human condition to human dignity, in specific situations and globally.

This topic is designed to encourage students to investigate the characteristics, principles, and underlying values of the major competing economic and political systems in the world today, and to acquire skills and sensitivities appropriate to taking an active part in resolving current political and economic issues. On completing the unit, students should have an understanding of the basic political and economic ideologies of the 20th century, and of the relationships of Canada's political and economic systems to global structures, institutions, and ideologies.

Political systems studied should cover the political spectrum and include representative democracy, democratic socialism, communism, fascism, etc.

Economic systems studied should include market, centrally planned, and mixed economies.

GENERAL VALUE ISSUE: *HOW SHOULD CITIZENSHIP BE DEFINED FOR THE REMAINING YEARS OF THE 20TH CENTURY?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

Personal Freedom / Concern for National Welfare — To what extent should political and economic systems emphasize individual freedom and group welfare respectively?

Laissez-Fair / Welfare of Mankind — Should multinational corporations be accountable to international agencies?

Humanitarianism / National Prosperity — Under what circumstances (if any) should a country trade with those nations which violate human rights?

Personal Freedom / Devotion to Principle — Should all citizens be required to take an active part in the political life of their community?

VALUE OBJECTIVES	KNOWLEDGE OBJECTIVES	SKILL OBJECTIVES
Students shall develop personal growth in the following value-related areas:	Students shall acquire information to develop interpretations of the following concepts and generalizations:	Students shall develop proficiency in all skill areas, including the following specific skills:
• An understanding of the human values underlying major forms of economic and political organization in the world today. • A willingness to accept and internalize, or reject, new value positions as evidence is presented. • An ability to reflect upon life goals and apply them in resolving specific issues relating to different conceptions of citizenship in the global community.	***Resources*** All societies operate from a position of scarcity and must devise political and economic policies accordingly. During industrialization, the range and complexity of ideologies in the global community have increased. ***Power*** Different views of the ideal distribution of power in a political system derive in part from differing views of the nature of man. Systems of political thought may also arise out of certain aspects of wealth, the economic system, areas of land suitable for the support of society, and possibilities for trade. *Adjustment* Political and economic systems are continually modified through the tension between the theory to which the society is committed and the changing nature and needs of that society. ***Values*** Nations reflect in their foreign policies the basic values which they espouse in their domestic affairs. In defining "world citizenship" assumptions must be made about the nature of man-in-society: — that individuals can "sense" that they have real global neighbours who share common problems and meanings; — that personal self-interest and global survival may be at odds; — that nation-states may not be able to solve global issues; — that short-term solutions may not solve long-term problems.	***Inquiry Skills and Examples*** A. *Define the social issue* in terms of value, factual, definitional, and policy elements. B. *Formulate appropriate research questions* (for application to a representative sample of case studies) to analyze the range of political/economic patterns of organization. C. *Read and interpret* primary source documents, applying the research questions. D. *Analyze and evaluate source materials* in terms of: credibility of source, emotional appeals, propaganda devices, use of statistical information, fallacious arguments, etc. E. *Formulate tentative generalizations* about the relationship of political and economic ideologies to a human value, e.g., universal justice. F. *Develop a concept* of citizenship to reflect ideological differences in the world today. G. *Create a plan of action* to heighten involvement in the political life of the community. H. *Examine the appropriateness of the plan* by consulting resource persons. ***Participation Skills and Examples*** A. *Support ideas logically* to build consensus on a solution to the issue. B. *Demonstrate understanding for the decisions of others* in defining world citizenship on the basis of a human value. C. *Apply rules of procedure* in simulating a parliamentary debate on an issue relating to ideologies. D. *Assist in group projects* designed to increase the "sense of human community" in school situations.

GRADE TWELVE — GLOBAL PERSPECTIVES

Topic B — Co-operation and Conflict Among Nations

In this topic, students examine the concepts of international co-operation and conflict during the 20th century. Emphasis should be placed on the nature of relationships among nations, rather than on a litany of wars.

When studying international co-operation, students should focus on trade pacts, appeasement, agreements in the areas of science, education and culture, and agreements regarding the conduct of wars. When examining international conflict, students should analyze the nature and causes of major 20th century conflicts as well as military alliances, limited war, embargos, blockades, terrorism and arms races (nuclear, chemical, and biological). Canada's role in these relationships throughout the 20th century should be given particular attention.

GENERAL VALUE ISSUE: *SHOULD WORLD GOVERNMENT BE INSTITUTED AS THE BEST MEANS OF ENSURING HUMAN SURVIVAL?*

RELATED SOCIAL ISSUES AND COMPETING VALUES:

Nationalism / Welfare of Mankind — Should nations be required to subject themselves to international laws and tribunals?
Patriotism / Reverence for Life — Should nations ever resort to war as a means of settling their differences or should they pursue peace at any cost?
Concern for National Welfare / Welfare of Mankind — Should any means possible be developed to ensure victory in war (e.g., biological and chemical warfare, arms race)?
Power / Equality — Should all countries have equal representation in the U.N. regardless of size, wealth, and power?

VALUE OBJECTIVES

Students shall develop personal growth in the following value-related areas:

- An understanding of the relationship of human motivations, needs and characteristics to the concepts of global co-operation and conflict.
- An acceptance of responsibility for life and the support systems that enhance life.
- The ability to apply knowledge of global issues to predict consequences of international co-operation and conflict, and to make choices that are consistent with universal principles of human survival and dignity.

KNOWLEDGE OBJECTIVES

Students shall acquire information to develop interpretations of the following concepts and generalizations:

Institutions

Institutions and abstract forces like alliance systems, nationalism, and militarism, represent one dimension of causes of conflict; the human dimension, particularly the personalities of leaders, is also of crucial importance.

The 20th century has witnessed significant attempts to reach agreement on conventions for the conduct of international relations. The U.N., as an association of states designed to maintain international peace and promote global welfare, has contributed substantially to this goal.

Values

Nations have traditionally been prepared to use whatever means were necessary for their survival.

The danger of nuclear war has made it necessary for nations to tolerate ideological differences, since the potential scale of destruction threatens to destroy the values for which war has traditionally been fought.

Identity

Nations have tended to be motivated first and foremost by national concerns. In the 20th century, repeated attempts have been made to balance the interests of nationalism with the duties of internationalism.

SKILL OBJECTIVES

Students shall develop proficiency in all skill areas, including the following specific skills:

Inquiry Skills and Examples

A. *Describe the issue* by identifying major international concerns related to conflict and co-operation.
B. *Establish research questions* to relate issues of conflict and co-operation to different levels of application (e.g., circle of friends, culture group, global).
C. *Read and interpret historical materials* to record successes and limitations of international agencies in the 20th century.
D. *Analyze and evaluate political cartoons* to determine symbolism used, and to identify points of view for human welfare.
E. *Summarize* the purposes of existing international agencies in areas encompassing defence, trade, arts, science, human rights, religion, etc.
F. *Formulate alternative solutions* to specific conflict situations. *Predict the consequences* of alternative solutions for national and global survival.
G. *Create a plan* for world government and evaluate in terms of physical, social, and ethical conditions.
H. *Assess the process* by comparing with processes used in previous units of study.

Participation Skills and Examples

A. *Express ideas and views* on the issue in written, verbal and visual forms.
B. *Listen to the expressions of feelings of resource persons* about personal experiences in situations involving human conflict.
C. *Identify shared beliefs* for human welfare on the basis of persuasion, compromise, and consensus.
D. *Provide support* for a group activity to improve efficacy in selected citizen participation skills.

LEARNING RESOURCES *

Grade Ten

McCarthy, Michael et al. *Human Rights: Respecting Our Differences.* Edmonton, Alberta: Alberta Human Rights Commission, 1978.

Evans, Allan S. and I. L. Martinello. *Canada's Century.* Toronto: McGraw-Hill Ryerson Limited, 1978.

Kirbyson, R. *In Search of Canada, Volume II.* Scarborough, Ontario: Prentice-Hall of Canada Limited, 1977.

McDevitt, D. et al. *Canada Today.* Scarborough, Ontario: Prentice-Hall of Canada Limited, 1979.

Grade Eleven

Fenton, E. (Gen. Ed.). *The Shaping of Western Society, An Inquiry Approach.* New York: Holt, Rinehart & Winston Limited, 1974. (Multi-Media Kit and Text).

Roselle, D. and Anne P. Young. *Our Western Heritage.* Scarborough, Ontario: Ginn and Company Limited, 1976.

Feder, Bernard. Viewpoints in World History: *Was There Really a Renaissance? What Forces Guided the French Revolution? What Were the Causes of the Protestant Reformation?* Scarborough, Ontario: Van Nostrand, Reinhold Limited, 1974.

Molyneux, John and Marilyn Olsen. *World Prospects, A Contemporary Study.* Scarborough, Ontario: Prentice-Hall of Canada Limited, 1979.

Fagan, Margaret and Marilyn Andrews. *Challenge For Change, A Geographical Approach to Selected World Issues.* Toronto: McGraw-Hill Ryerson Limited, 1976.

Grade Twelve

Roselle, D. and Anne P. Young. *Our Western Heritage.* Scarborough, Ontario: Ginn and Company Limited, 1976.

Trueman, John et al. *Modern Perspectives.* Toronto: Mc-Graw-Hill Ryerson Limited, 1979 (new edition).

Moore, Joseph and Roberta Moore. Hayden American Value Series: Challenges and Choices: *War and War Prevention.* Rochelle Park, New Jersey: Hayden Book Company Incorporated, 1974. (Canadianized edition: General Publishing Company, 1979).

Stoessinger, J. G. *Why Nations Go to War* (Second Edition). New York: St. Martin's Press, 1978.

Feder, Bernard. Viewpoints in World History: *What Were the Causes of World War I? How Did the Communists Seize Power in Russia?; The Rise of the Nazi Horror: Who Was Responsible? The Nuclear Arsenals: Security or Suicide? The United Nations: "Man's Best Hope for Peace?".* Scarborough, Ontario: Van Nostrand Reinhold Limited, 1974.

* Additional titles will be added during the 1979-80 School Year.

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